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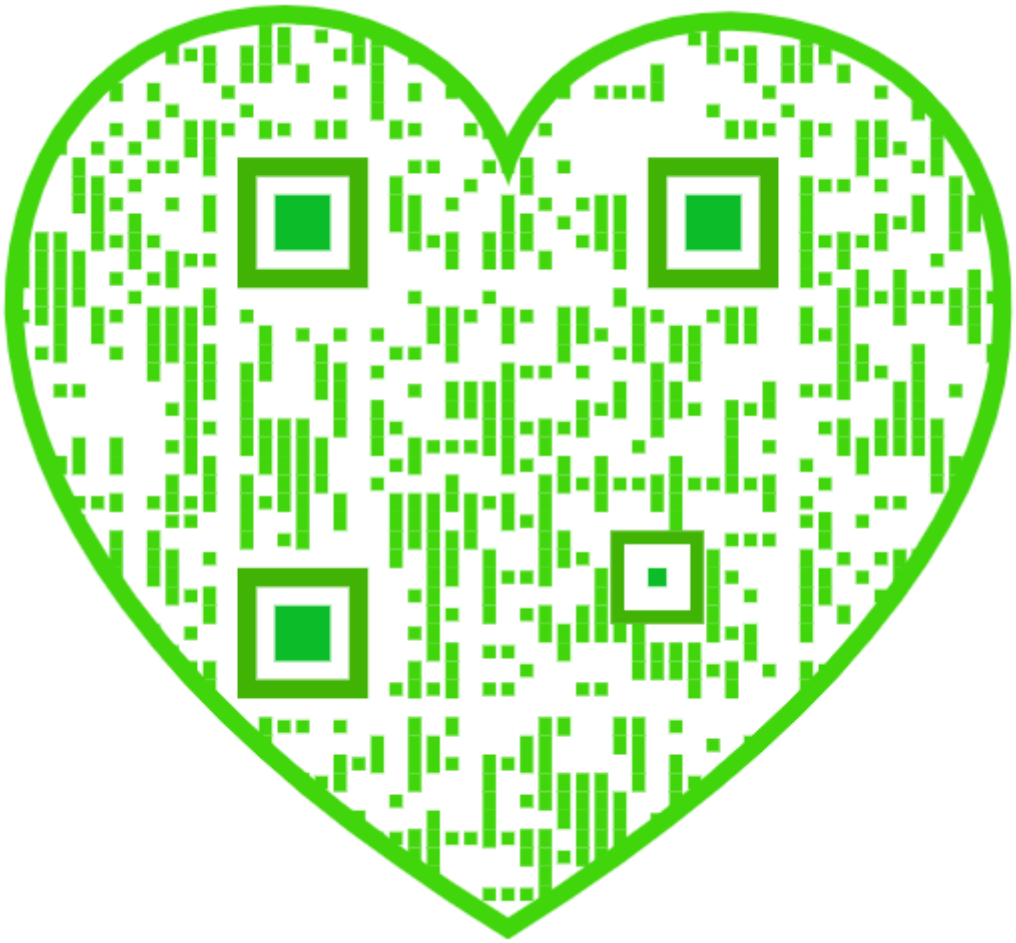

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SUGGESTIONS

FOR

Teaching Household Arts

AND

Agriculture

PUBLISHED BY THE
DEPARTMENT OF EDUCATION

M. L. BRITTAIN,
State Superintendent of Schools

ATLANTA, GA.
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PREFACE.

For sometime, Miss C. S. Parrish, Mr. M. L. Duggan, Mr. F. E. Land, and Mr. Geo. D. Godard, our State School Supervisors, have felt the necessity for presenting their teaching on industrial subjects in a more definite and permanent form. The need for this exists rather more keenly than in other departments of the educational field where the form of instruction has been agreed upon and fixed through custom and practice for years. This pamphlet is the result of their conference and deliberation at the Department of Education, and I cordially endorse its purpose, and believe it will be of decided benefit to the schools of the State.

M. L. BRITTAIN.
State Superintendent of Schools.

GARDENING FOR COUNTRY SCHOOLS.

An intimate knowledge of the difficulties in the way of teaching gardening effectively in country schools has led to a plan which will obviate most of these difficulties, and be within the power of any country teacher.

It is fully understood that if gardening in country schools is to succeed, it must, under present conditions, begin and end with the school term, take only a little of the time of each child, be done on a small surface, meet a practical need, and commend itself to the parents of the children.

Hot-bed and cold frame gardening may be begun in Georgia at any time from October to January, and the plants may be transferred to the open ground on dates ranging from January 15 to April 15. These dates include the term of the great majority of the country schools. Neither the hot-bed nor the cold frame will occupy much space, a half hour a week from each child will keep them in order, they will give fresh vegetables a month earlier than would otherwise be possible, and will supply home gardens with plants which are now usually ordered from a distance or grown very late.

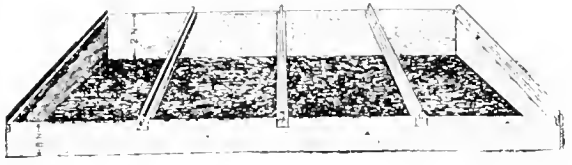
Instructions For The Hot Bed.

Select a place sunny in winter, sheltered from the cold winds, and so well drained that water will not rise in a shallow pit. The south side of the school house is frequently suitable, the higher wall of the wooden frame being placed about four feet from the school house. Dig a pit sixty-eight inches wide, twelve feet long and two feet deep. In the bottom of the pit, put coarse litter to the depth of six inches. On this put twelve inches of fresh horse manure, mixed with humus. If the manure has very little humus in it, put alternate layers of manure and leaves, hay, or chopped corn stalks. Trample or beat this manure down until it is well packed. It will be well to pack litter between the manure and the sides of the pit, in order to protect the manure from the cold ground. On the manure, put four inches of woods earth or rich garden soil, liberally mixed with well rotted manure—preferably cow manure. Then put the frame and cover described below in place, and leave the bed to heat up. The heat is caused by the fermentation of the manure. The seeds should not be planted until four or five days later.

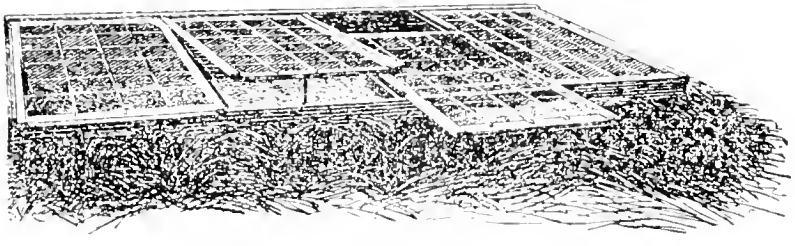
Wooden Frame for Hot Bed or Cold Frame.

Make a rectangular frame twelve feet four inches long and six feet wide on the outside. Let it be twelve inches high at the back, and six inches high in front. Let the sides slope so as to fit this back and

front. Make three grooves, three inches wide, one inch deep, two feet and ten inches apart, on both front and back. Be careful to have these grooves on front and back exactly opposite each other. In the grooves nail strips, six feet long three inches wide and one inch thick. Along the middle of each three inch strip nail a strip six feet long, one inch wide and one inch thick. The frame is illustrated below.



Glass sash six feet long, and three feet wide, may be used to cover the frames. Sash of this sort may be bought for two dollars and twenty-five cents apiece, from any lumber manufacturing company,



Hotbed, Showing Frame and Sash.

but this would make the beds expensive, and glass is not necessary to success. A thick, stout cotton cloth which can be bought for fifteen cents a yard may be substituted. If this is used, no sash will be necessary. The inch strips will also be unnecessary. The three inch strips will still be needed to hold up the cloth.

Directions for Cloth Cover.

Cut the cloth into lengths of seven feet, sew these together on the selvage edges until there is a piece fourteen feet wide. Turn one of the raw edges under, and tack it to the top of the frame, letting one foot hang over at each end. Turn under the other raw edge, and nail it to a stout pole twelve feet long. The seven feet of cloth will allow the pole to hang over the front of the cold frame, weight the cloth, and hold it in place. The lumber for the frame will be cheaper if it is bought undressed. In this case, it should be covered with a creosote stain to make it last longer. Very frequently, the children can pick up enough scrap lumber about their homes to make the frame, and the best parts of two or three old wagon sheets will make the cloth cover.

Cold Frame.

This is nothing more than a frame built and protected just as a hot-bed frame is, but without the fermenting manure. It is placed on well broken up ground, in a sunny place, six inches of woods earth or garden soil mixed with well rotted manure are put in it, and it is ready for use.

Remarks and Cautions.

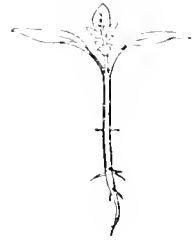
The slope of either hot bed or cold frame should be toward the south, so as to give the plants the winter sunshine.

The dimensions given for the frames are merely suggestive. A frame twelve feet long will have four compartments three feet wide. If it seems best, there may be four separate frames, each three by six. Other arrangements will readily suggest themselves. In most cases, it will be better to have both a hot bed and a cold frame. Sometimes, one small hot bed, and a cold frame for each grade is advisable.

Teachers are urged to have the children make the wooden frames and the cloth covers, thus giving them valuable manual training, and to have them calculate the quantity and cost of the lumber and cloth, thus giving them practical work in arithmetic.

Use of the Frames.

The seeds should be sown first in the hot bed. As soon as they have their true leaves, they should be drawn gently out or removed with a flat stick. The soil should be well watered the day before this is done so that the work will be easy. With the flat stick or with the fingers, lift out a clump of soil with a number of plants in it, and then gently separate the little plants. Set the plants deeper than they were in the hot bed but not too deep. The figure below shows the proper size of the little plant and the depth at which it should be planted. When



the "pricking off" or transplanting is done the plant should be protected from the sun for a day or two. When the plants are two or three inches high they should again be transplanted. This transplanting often repeated will make them "stocky" and hardy. Then when the spring opens, and they are put into the open ground they will grow faster and make finer vegetables. As soon as they develop a good leafage, they should be "sheared" at each transplanting. This shearing is a good thing to remember in connection with all transplanting. It takes some little time for the newly set roots to adjust themselves and get water from the soil. If there is much leaf surface, the evaporation will send away far more water than the plant gets from the roots and it will die. When the leaves are cut away, evaporation is checked until the roots can begin to do their work. Care must be taken, however, not to cut out the bud from which the plant grows. The cut below shows where the shearing should be done and also shows the advantage of transplanting. Plants "a" and "b" are the same age but "a" was left in the seed bed while "b" was transplanted.

Care of the Frames.

When the sun is shining, and the weather is not too cold, the glass or cloth should be removed, and the plants allowed to get sun and air. The cover should always be put on before sunset and left on until the sun is high in the sky in the morning. On cold cloudy days, the frames should be left covered. At a school, they should be carefully closed on Friday afternoon and left so until Monday morning. On very cold nights, old rugs or sacks or anything warm, which is handy, should

be thrown over the frames for extra protection. The earth in the frames should be kept moist by sprinkling it well with tepid water every two or three days. It should never be allowed to get dry, and care should be taken that the wetting goes to the lowest roots of the plant. When the weather is chilly or cold, the water used may be quite warm. When there is a warm gentle rain, open the frames, and let the plants enjoy it, but shield them from cold or beating rains.

CALENDAR.

November.

Sow lettuce, cabbage, cauliflower, beets, tomatoes, egg plants, sweet peppers, onions and pansies in the hot bed. Sow spring radishes and parsley in the cold frames where they will not be disturbed. Prick off all plants except the radishes and parsley as soon as they have their true leaves. The tomatoes, pepper and egg plants would better be planted again in the hot bed, but the others can go to the cold frames.

December.

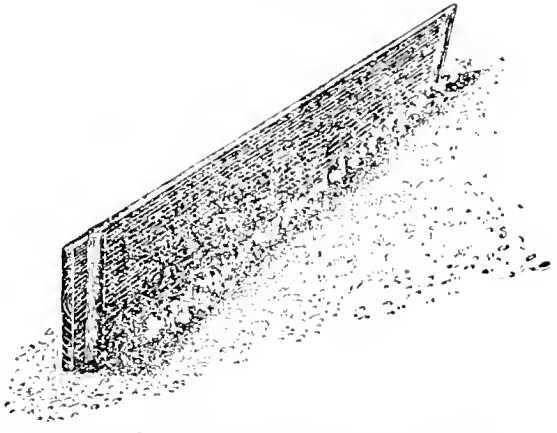
Transplant to the cold frame all plants that are ready for it. Make fresh sowings of lettuce, cabbage, cauliflower, tomatoes, and beets in the hot bed. Put the cabbage plants in a more exposed part of the cold frame to "harden off." This is done by giving more air and less water, and by leaving them uncovered more and more, until finally the covers can be left off entirely.

January.

Transplant from December sowings. Transplant the "hardened off" cabbage plants to the open ground. Take some tomato plants from the hot bed, plant them near the higher wall of the cold frame, and turn a fruit jar over each, taking care that the glass does not touch the plant. Let as many children do this as will bring the fruit jars. Make fresh sowings of whatever plants the children want.

February.

Let the children take home cabbage and beet plants and put them in the open ground. If they can make shelters like this let them take



Board Used for Protection of Plants.

tomato plants, cautioning them to turn the glass jars over the plants and to cover the whole with old rugs on cold nights. The board should be on the north side of the plants. Have the children fold paper boxes and fill them with rich earth. Plant in these boxes cucumbers, cantaloupes and squash. Place the boxes in a sunny part of the cold frame, and keep them well watered. These plants cannot be transplanted, but when the spring opens, the paper boxes can be set in the open ground. The paper will decay and fall away, leaving the plant to flourish and fruit much earlier. Make a last sowing of tomatoes.

March.

As soon as the warm weather comes, let the children take all the plants home and plant their gardens. The school may make a specialty of growing certain plants, and selling them to neighboring farmers. Tomato plants will pay well. Beets are not hurt by frost and can be put out in February. If the school is near a market the cultivation of lettuce can be made very profitable.

Cultural Directions.

Seeds should be covered with earth to about four times their thickness. The earth should always be "firmed" over and around the seed. It is good for a child to get into the hot bed or cold frame and walk heavily over every inch of it after the seeds are planted. This will press the earth close to the seed so that the plant food will be easily available. After this the ground should be lightly raked over so as to give it a "dust mulch." After the plants come up, the soil should be kept stirred, but all cultivation should be very shallow.

The illustrations on the preceding pages are copied by permission from bulletins of the United States Department of Agriculture.

CHILDREN'S HOME GARDENS.

Hot beds and cold frames furnish, perhaps, the best form of vegetable gardening which can be carried on successfully at the country school under present conditions, but every teacher should encourage home-gardening among the children, allowing them to take plants from the hot beds and cold frames as a starting point for these gardens. The teacher should discuss the methods and principles of outdoor gardening in the school, should visit the home gardens, and help the children to preserve and market the crops. The lessons given at the school can be utilized for reading, writing, spelling, language and arithmetic, so that time will be saved rather than lost. If the work is well done, the parents will be pleased rather than offended.

If the cabbage plants in the cold-frames have been hardened off properly, they can be planted in the open air, even in December and January. They will grow a little in every warm spell and thaw out safely after every hard freeze. The teacher should learn the details of cabbage culture, teach it to the children, and encourage emulation among them in growing fine cabbage. For these details, see Free Farmers' Bulletin No. 433. Lupton's "Cabbage and Cauliflower for Profit" can be bought from Peter Henderson, New York City, for 25 cents.

Cauliflower should not be put in the open ground until all danger from frost has passed, but the children should be encouraged to grow some in their home gardens. It is much more delicate than cabbage, can be cooked in a number of ways, and will help to give variety to the home diet.

Each child should be persuaded to select three or four varieties of plants from the hot-bed and cold-frame, but it would probably be better to emphasize tomatoes, since this is the usual vegetable for the girls' canning clubs.

The teacher should persuade as many girls as possible to cultivate a tenth-acre garden, and should, as far as possible, visit the homes for the purpose of helping the girls to locate and lay off their gardens. When this is done, the tomato plants grown in the hot-beds and cold-frames should be used for the earliest plantings, thus enabling the girls to begin their canning a month earlier than would otherwise be possible.

The teacher should encourage the girls to make later sowings in the open air, so as to have ripening tomatoes in the garden until frost. When the coming of frost is certain, all the small tomatoes should be gathered from the vines for pickling purposes. The vines with the large tomatoes on them may then be pulled up and hung in the barn, or some other sheltered place on rafters. Sometimes the tomatoes

which are nearly ready to ripen are gathered, wrapped in paper, and packed in boxes. They will ripen gradually and last a long time. The girls in the school who cannot have a tenth acre garden should be encouraged to have a smaller one, to can their vegetables and keep their records as carefully as the canning club girls do. The school itself should offer some reward for best results among these small gardens.

For instructions and directions in tomato culture see bulletins of Georgia State College of Agriculture No. 6, "Girls' Club Work in Georgia," and Free Farmers' Bulletins Nos. 220, 521, and 833. These cost nothing. Write to U. S. Department of Agriculture, Washington, D. C.

The squash, cucumber, and melon plants transferred to the open ground, as indicated in "Hot-bed and Cold-frame Gardening," will give results at least a month earlier than from seeds planted after the danger of frost has passed, but the children should be encouraged to continue this culture by planting seeds as long as the season permits. For details concerning squash and cantaloupe culture, see Free Farmers' Bulletin No. 255, and for cucumbers, Bulletin No. 254.

Treatment of Soil.

The children should be persuaded to break up the soil for their garden in the fall, and to give it the deep plowing advocated for farms. If a child has only a small plot, he can do deep breaking with a fork. He should be led to add humus and stable manure to it through the fall and winter, and to put it in such a condition that it will conserve the winter rains. This will give the teacher a fine opportunity to teach the physical and chemical nature of the soil, and how to build it up. The capacity of the different kinds of soil for water, the capillarity of the soil, and many other lessons can easily be taught in this connection. See Free Farmers' Bulletin No. 409.

The Rotation of Crops.

The rotation of crops, so necessary on the farm, is also advantageous in the garden, and the children should be taught to follow peas and beans with corn or with lettuce and cabbage, and these with beets, radishes and similar crops. Sometimes it is well to have a garden in which only half the space is put in vegetables, while the other is kept in clover or some other nitrogen giving crop, the garden being shifted to this place when the clover comes off.

Successive Plantings.

It is a common custom in Georgia to plant a garden in the early summer, and when this has passed, to do without vegetables. The children should be taught to make successive plantings in their gardens, so as to have a great variety of vegetables from early summer until frost, and a somewhat smaller variety through the whole winter. Peas, beans, radishes and beets, should be planted every two weeks until about six weeks before frost. Corn should be planted every three weeks through the same period. There should be at least three plantings of tomatoes. All other vegetables cultivated in the garden should have as many successive plantings as may be necessary to ensure a continuous supply.

Winter Gardening.

In south Georgia a great variety, and in north Georgia, a goodly number of vegetables will grow through the winter. Spinach, mustard, kale, turnips, turnip-greens, rutabagas, leeks, onions, parsley, salsify, parsnips, carrots, radishes, and beets can be had through the winter as far north as Athens. Parsnips, salsify, and carrots are long-season vegetables, and should be sown not later than June. They will remain in the ground until they have to be removed for spring plantings, and

will be entirely uninjured by heavy freezes. Turnips, rutabagas, beets and some onion-sets should be planted in July or August. These also will remain in the ground throughout the winter uninjured by freezes. Onion-sets may be put out at any time from the middle of July till the middle of March. Spinach, mustard, and seven-top turnips for greens may be sown as late as October, and if well established before frost, will flourish throughout the winter. Winter radishes and beets may be sown through August and September.

Seed Catalogues and Bulletins.

Seed Catalogues may be had from Peter Henderson, New York City; from Livingston & Sons, Columbus, Ohio; from Wood & Sons, Richmond, Va.; and from H. G. Hastings & Company, Atlanta, Ga. These will be very valuable in giving instructions for planting and cultivating all sorts of vegetables.

Free Farmers' Bulletin No. 255 can be obtained from the United States Department of Agriculture, Washington, D. C., and gives a valuable discussion of the home vegetable garden. Other bulletins can be obtained giving minutely the method of cultivation of certain vegetables. For Beans, see Bulletin No. 289; Cabbage, No. 433; Celery, No. 282; Cucumbers, No. 254; Onions, No. 354; Strawberries, No. 198; Raspberries, No. 213; Cow Peas, No. 318; Grapes, No. 471; Potatoes, Nos. 35 and 884; Asparagus, No. 61; and Tomatoes, No. 220. If a book is desired, Bailey's Principles of Vegetable Gardening can be bought from the Macmillan Company, Atlanta or New York. Weed-Emerson's "The School Garden Book," and Meier's "School and Home Garden," are also very helpful. The first is published by Charles Scribner's Sons, the latter by Ginn & Co. Both can be bought from The Southern School Book Depository, Atlanta, Ga.

Free Garden Seed.

Enough free garden seed for distribution among the school children may be obtained from the United States Department of Agriculture through the congressman from the district. In order to obtain these seed the teacher should write to the congressman in November or December, giving him a list of the seeds desired and the number of children in the school as an indication of the quantity of the seeds needed.

Form of the Garden.

Plan for a Home Garden for a Family of Children, or for a School Garden.

The children should be warned to plant their vegetables in long rows, so they may be easily ploughed. Several different vegetables may be planted in one row.

The Roman numerals number the rows. The Arabic numerals show successive plantings. Names of months indicate times of planting.

Trellis for Lima Beans.

I.	1. Early English peas, Dec 2. Corn and peas, May. 3. Sev top turnips, Sept.	Early English peas, Dec. Corn and peas, May Sev top turnips, Sept.	Early cabbage, Dec. or Jan. Beans, May or June. Rutabagas, July or August.	Early cabbage, Dec. or Jan Beans, May or June. Rutabagas, July or August
II.	1. Early radishes, Feb 2. Tomatoes, May 3. Onions, Nov. or Dec.	Lettuce, Feb Tomatoes, June. Onions, Nov. or Dec.	Lettuce, Feb. Tomatoes, June. Onions, Nov. or Dec.	Cantaloupes, April. Tomatoes, August. Onions, Nov. or Dec
III.	1. Early beans, March. 2. Carrots, May. Jonquils, Oct Violets any time.	Early beans, March Carrots, May Narcissus, Oct. Violets	Cauliflower, March. Salisfy, May. Crocuses, Oct Violets.	Cauliflower, March Salsify, May. Tulips, Nov. Violets.
	WALK	WALK	WALK	WALK
IV.	Parsley, Feb. Sage, April. 1. Early tomatoes, April 2. Parsnips, June.	Parsley. Sage, April. Early tomatoes, April Parsnips, June.	Mint, March. Rhubarb, Nov. Early tomatoes. Turnips, July.	Mint Rhubarb. Early tomatoes, March. Turnips, July.
V.	1. Early sweet corn, March. 2. Tomatoes, June.	Early cucumbers, March. Tomatoes, June	Early cucumbers, March. Tomatoes, June	Early cucumbers, March. Tomatoes, June

VI.	1. Early Snap Bean, March 2. Sweet potatoes, June. 3. Late spinach, Oct	Early beans, March. Sweet potatoes. Late spinach	Red peppers, Feb. Tomatoes, July. Onions, Nov.	Red peppers, Feb. Tomatoes, July. Onions, Nov.
VII.	1. Early Onions, Nov. 2. Sweet peppers, April 3. Leeks, Nov.	Early squash, March. Okra, June. Leeks Nov.	Early onions, Nov Egg plant, April Celery, August	Early onions, Nov Egg plant, April. Celery, August.
VIII.	Asparagus, Nov	Asparagus, Nov	Asparagus, Nov	Asparagus, Nov
IX.	Sunflowers, artichokes,	sweet fennel, etc		Sweet Fennel.

Suggestive Plan for a Home or a School Garden for one Child.

I.	Violets, Dec. Sage, May.	Violets, Dec Thyme, May	Hepaticas, Dec Lavendar, May	Hepaticas, Dec. Sweet marjoram, May
II.	English peas, Dec. Corn, May. Peas, June. Radishes, Oct.	Beans, Feb Popcorn, April Spinach, Sept	Early cabbage, Dec Beans, May Turnips, August.	Lettuce, Feb. Salsify, May
III.	Radishes, Feb. Tomatoes, May. Onions, Nov.	Tomatoes, March. Beans, August Onions, Nov	Cauliflower, Feb. Tomatoes, June. Onions, Nov.	Sweet corn, March Tomatoes, June. Onions, Nov.
IV.	Rhubarb, Nov. Parsley, April	Horse radish, Nov. Parsley, April	Small red peppers. Mint, May.	Sweet peppers, April Mint, May

CORN CLUB WORK.

The corn clubs in Georgia have passed beyond the experimental stage, their immense value to the State having been fully demonstrated, hence every teacher in the State should induce as many children as possible to join them.

It is a mistake to suppose that the demonstration agents employed by the general government, by the State, and by private enterprise, could do this work without the co-operation of the teachers, even though their present number should be quadrupled. Last year there were 10,000 Georgia boys enrolled in the corn clubs, with not more than seven agents to look after them. That only 2,500 boys persisted to the end was largely due to the fact that the teachers did not feel their responsibility in the matter, and did not co-operate as they should have done.

The first thing that the teachers should do is to become familiar with the work themselves. They should write to J. Phil Campbell, State College of Agriculture, Athens, Ga., and obtain for their own use all the bulletins needed by the corn club boys. These should be carefully studied so that the teacher can be the leader of the boys. The first thing for the teacher to do in helping the boys is to see that the acre is properly laid off. Different shapes for the acre and methods of laying it off should be discussed in the arithmetic class and the boys informed about the matter. The teacher should see that the boys do deep fall plowing wherever the soil will allow this, and that they put a sufficient quantity of humus on the acre to make it conserve the winter rains and render the crop practically independent of summer drought. The constant cultivation of the corn should be urged upon them. They should be stimulated to stir the soil lightly after every rain so as to conserve all the moisture possible, but they should also be taught that the drier the ground, the greater the need of cultivation in order to make sure of all the moisture it has. In like manner, the teacher should look after every detail of the work, visiting the acres frequently and helping the boys in every way possible.

The records which are required by the corn clubs can be utilized by the teacher in reading, spelling, language, composition, and arithmetic work, and therefore should be made at the school and inspected by the teacher, the periods usually given to the subjects mentioned being used for them whenever necessary.

One embarrassment for the teacher has come from the fact that not all the children in certain classes join the corn clubs, and there is not time enough, aside from the regular class work, to give the necessary instructions. This trouble can be obviated by giving the instruction to the whole class or to several classes combined, and then utilizing it as a basis for other subjects as has been indicated. It will be well to persuade such children as do not belong to the corn club to undertake to

cultivate a smaller plot, say a square rod, according to corn club directions. But whether they do that or not, there is no better way to arouse interest in the subject than by teaching it to all the children at suitable times throughout the session.

Illustrative Series of Lessons.

Take Free Farmers' Bulletin, No. 229, and have several children read to the class the marks of a desirable stalk of corn, pages 6 and 7. Make sure of the attention of the whole class to the matter read. Manage the reading as you would any other reading lesson. In the language period, question the children about what was read, until all the marks of a good stalk of corn are developed, and have the children write these on the board as an outline for a composition. Have the children talk this over with the teacher until the matter is rich and full, and they are perfectly familiar with it. Utilize this conversation as an oral language lesson. The children are now ready to go to a nearby field and select good stalks of corn. If this is not possible, have each child bring a good stalk from his father's field, and have the children compare and judge the stalks.

Compositions should be written by the class according to the outline developed. Go over these, and select three or four of the best to have read before the class.

Make a list of the misspelled words and have them for a spelling lesson.

Make a list of the grammatical mistakes and use them for a grammar lesson, assigning the children the parts of the text-book bearing upon these mistakes, as home work.

Make a record of all the bad sentences and have the children reconstruct them. In like manner, the selection of the best ear, the germination of the seed, the preparation of the soil, the mixing of the fertilizers, and every other detail of corn culture can be made the basis of lessons in the subjects mentioned, and also of very valuable work in arithmetic. The children should make germination boxes themselves as manual training, and each should test several ears of corn, finding and recording percentages of germination, length of sprouts, &c.

The children should study carefully the root development of corn, from the sprouting of the seed to maturity, and make careful drawings of it. The method of corn reproduction, the reasons for detasseling, cross-pollination, and many other subjects can be given as nature work. For definite instructions, see Bulletin of Georgia State College of Agriculture, (Boys Corn Club) No. 3, and Free Farmers' Bulletins Nos. 229, 313, 537, 741, 503, 644, 414, and 415. These may be obtained from The State College of Agriculture and from the United States Department of Agriculture, Washington, D. C.

HOUSEKEEPING AND SANITATION IN THE RURAL SCHOOLS.

"Cleanliness is next to Godliness" finds ample demonstration in an ordinary common school, where it is so nearly related to the health and happiness of human life.

The Schoolroom.

It is assumed that the school house has already been built, that it is properly located, and that it is of sufficient size to accommodate all the children of the district. It should be situated on an elevation, not too close to creeks, swamps, and marshes. For proper form, size, location, &c., see "School Architecture" Department of Education, Atlanta, Ga.

A large supply of light should flood the schoolroom during school hours. An insufficient supply will injure the eyes of the pupils quickly and permanently. The light should come from the left and the rear of the children rather than from the front. Direct sunlight should not fall upon the desk or book of any pupil while he is studying.

Ventilation.

The ventilation of the room should have the constant and careful attention of the teacher and trustees of the school. Broken window-panes should be immediately replaced with whole ones, as partial draughts on children often cause serious and sometimes lasting results in poor health. Cracks in the floor should not be allowed to exist. where the room is well constructed, at least one window should be left open on the side opposite the wind, and if the weather will permit, all the windows on that side should be open. Fresh air and sunshine tend to keep down disease, and should be used freely.

Heating.

Proper heating of the room is quite neeessary. Under-heating is less injurious than over-heating. An iron stove should be used where better forms of heating cannot be afforded. The pipe should have at least one elbow in it in order that the heat may be kept in the room, and the pipe should be thoroughly riveted to prevent any falling. A zinc or tin mat should be placed under the stove, and there should be a perforated radiator enclosing the fire-pot to prevent danger to children, and to mix more evenly the hot air with the cooler.

Cloak Rooms.

Every schoolroom should have cloak rooms for hats, cloaks, and lunches. These articles should never be allowed in the desks of the children. Nails or hat-hangers should be placed on the walls of the

cloak room, a number should be placed over each, and each assigned to one particular child. There should be shelves to hold the lunches and dinner-buckets of the children. No crumbs should be allowed to remain on the floor, as rats and mice will be drawn to the room to the injury of flowers and books. The cloak room should not be made a place for storage of plunder and useless material.

If a good cloak room cannot be afforded, one may be improvised by cutting off a narrow part of the room with canvas cloth. This will not cost much and the appearance of the room will be much improved.

Scouring.

The floor of the schoolroom should be kept clean. It should not be used after vacation until it has been swept, brushed, dusted and scoured. Even the desks should be washed, the walls and ceiling brushed, and the windows cleaned inside and out.

The glasses of the windows may be cleaned with some such preparation as "Bon-Ami," which may be purchased at most grocery stores. In the absence of this, use cloths sprinkled with kerosene oil, and then polish with a dry soft cloth. Use a step-ladder to reach the windows or tie a mop to the end of a pole and do the work with that.

For cleaning the window-sills, sash-frames, chalk-trenches, and mouldings, add two tablespoonfuls of kerosene oil to one bucketful of water, and apply with a cloth.

Lastly the floor should be well scoured. Having cleared it of all movable furniture, wet it thoroughly with an easily procured potash preparation, or strong soap and water, and scrub with a mop until clean, rinsing it well with clear water. The old fashioned shuck mop is probably the best and the most available in the country, but sacks may be wrapped on a weeding-hoe and used to good effect, or a worn cane stick-broom may prove a good substitute.

Floor Dressing.

After being thoroughly cleaned, it would be well for the floor to have a coat of floor-dressing or floor oil which can be obtained from any disinfectant company, as West Disinfecting Company or The Frederick Disinfectant Company, both Atlanta, Ga. This will cost not over one dollar per gallon, and one gallon will dress one room, with enough left for the closet floors. This preparation will keep down the dust and kill disease germs.

Sweeping.

Before the sweeping is begun, spider webs, and other deposits should be brushed from the walls and furniture, the broom dampened with kerosene water, and the doors and windows opened. The sweeper should

use a heavy, steady pull, rather than a jerk which raises the dust, and should go from the walls toward the center of the room, in order that the dust may not be blown back by the wind. When the trash is in a heap, it should be taken up in a dust pan, put in a box or basket, and carried to a trash pit at some distance from the house, where it should be burned at suitable times. The pit should be dug a few feet deep, and may be enclosed with a small piece of wire fencing.

All sweeping should be done thoroughly, leaving no corners or places under desks or stove unswept. If there are rugs, they should be taken up and shaken, and the space under them swept. When the work is complete, the broom should be dipped into the bucket of kerosene water, and hung with straw downward to dry.

The sweeping should be done at least once a day, and, if possible, twice. After a little wise and tactful teaching of sanitation, the children will sweep cheerfully, if no janitor service is available. Fine results have been obtained by dividing the children into housekeeping groups, and exciting emulation among the groups.

Papers should never be allowed to lie on the floor or on any part of the grounds. The time to pick up a paper is the moment it drops. Children should be trained not to tear up paper without a purpose, and to put all useless paper into a basket or box provided for the purpose. Some teachers have the children make pretty little bags, and hang them on the desks to hold necessary waste paper. Under no circumstances should paper be swept into the yard. Dirty papers are carriers of many deadly disease germs, are frequently selected by flies as places of deposit for their eggs, are ugly, untidy and in every way objectionable.

Dusting.

As soon as all dust has settled, the room should be carefully dusted. Instead of the ordinary dust-brushes, lintless clothes should be used. These may be made of flour or sugar sacks, and should be of convenient size for the hand. Moisten the cloths with kerosene water, and rub carefully the furniture, as well as every other dust-catching surface. The kerosene in the water will tend to polish the furniture each time it is rubbed, and it serves as a disinfectant and deodorizer, making the room unpleasant for flies. After the dusting is completed, wash the dust-cloths in soap and water, and hang them in the sun to dry.

Water.

The drinking water should be kept in a closed cooler from which it may be drawn through a faucet and not in an open vessel exposed to dust. If the ordinary cooler cannot be had, a keg with a capacity of five or ten gallons may be used. It should be covered at the top and

have a faucet from which the water may be drawn. A bucket or basin should be placed under the faucet to catch all waste water.

The children should be encouraged to procure individual drinking cups for use in the school. A common dipper should be early dispensed with, as it is a common carrier of disease germs.

Each child should be encouraged to have his own towel and soap, and, instead of the common pan or basin for washing, they should have water poured upon the hands.

The well or spring from which water is supplied to a school should be rigidly cleaned and kept free from the surface water which might contaminate it. Mud puddles should not be allowed to exist near the source of water supply. The well should be covered so that nothing can fall into it.

Yards.

The school yard should present an example of cleanliness to the whole community. A litter of papers about the yard will spoil its appearance, no matter how well it may otherwise be kept. Papers may easily be picked up with a sharp stick, and placed in the paper pit. The children should be required to keep all trash off the grounds and the yards should be swept every week.

Closets.

Closets, at suitable distances from each other and from the schoolroom, should be kept decent and clean. Lime, ashes, and kerosene oil are good disinfectants and deodorants, and should be freely used each day to keep the closets in a sanitary condition.

For specifications for "Sanitary Surface Privy" see Bulletin Georgia State Board of Health, Vol. 1, No. 3. Address Georgia State Board of Health, Atlanta, Ga. Consult also "School Architecture," Department of Education, Atlanta, Ga.

Prevention of the Spreading of Disease.

When a child is present in school with a suspected case of contagious disease, such as measles, mumps, chicken-pox, small-pox, whooping-cough, sore-eyes, skin disease, or fever of any kind, it is advisable to take him apart from the school at once and ask him to go home until a conference may be had with the parents. The teacher should seek this conference as early as possible, and ask that a physician be consulted. This action should be taken for the good of the school and the whole community.

A child known to be affected with any contagious disease, or exposed thereto, should be suspended from school for a certain period of days, which period may be definitely learned from any well-informed physician.

TEACHING COOKING IN RURAL SCHOOLS.

The first, and generally effective, obstacle that confronts the rural school teacher when the subject of teaching cooking is suggested, is the entire lack of room or equipment. This is usually a greater discouragement than even a lack of training on the part of the teacher. However, like many of our troubles, it is mainly imaginary. It is the purpose of this Bulletin to point an easy solution to the first problem, and to remedy, as far as possible, the second.

The subject of Cooking will be treated under the following heads:

1. *Where?* Place and equipment.
2. *What?* A selection of Foods. Food values and combinations.
3. *Why?* A discussion of Dietetics, &c.
4. *How?* Simple directions and a few typical receipts.
5. *Serving.* Conventionalities; Menus; &c.
6. *Canning and Preserving.* Economy, Thrift, &c.

1. WHERE?

(a) *At the school*; (b) *At the homes.*

(a) Under the direct instructions and supervision of the teacher at the school, in regular hour periods once a week, and at the noon recess or other odd times.

(b) At the homes either in clubs or individually according to suggestions from the teacher and the mothers, the children affording real help in the family daily work, with results reported to the teacher. For this some school credits might be given.

School Equipment: The ordinary school heating stove, a one-compartment Fireless Cooker, (cost from $5.00 to $10.00), and, if possible, for use during the summer months when the heating stove is out, a one-burner oil stove. (Cost about $5.00.) A great deal can be done with the ordinary school heating stove.

Utensils: Besides the utensils that come with the Fireless Cooker, the following will be needed: Three triangular nested boilers for the Fireless Cooker or the heater, (Cost $3.00); One oil-stove baker, $2.00; one large dish pan; 1 pie pan; 1 pitcher; 1 grater; 1 qt. coffee pot; 1 egg beater; 1 sauce pan; muffin pans; measures; knife, fork, & spoon; 1 wooden spoon.

If possible let all utensils be of aluminum.

The above itemized list of utensils is intended only as a minimum requirement for a school equipment. A liberal and first-class home kitchen equipment is a source of genuine economy, and should be carefully considered and encouraged. The home kitchen is the most important room in the house, and on it depends the physical life, and in

large measure the spiritual life, of the family. At least as much expense should be devoted to beautifying and equipping the home kitchen as the home parlor.

2. WHAT?

Foods and Food Values.

The foods needed to build up and sustain the body are divided into five classes, each of which has a special work to do in the body. For that reason a proper proportion of each class of foods should be provided for each meal.

Five Classes of Foods.

SOURCE AND USE OF THE CHIEF FOOD CONSTITUENTS.

1. PROTEINS. Lean meats; gluten in flour; eggs, milk, cheese, fish, beans and peas. Proteins build tissue and repair its daily waste. They are especially valuable in bone building.

2. FATS. Butter, cheese, fats in meats, cream, olive oil, cotton seed oil, oil in nuts. Fats give heat and energy and produce fat.

3. CARBOHYDRATES. (a) *Sugar*: Fruit, cane, beet, maple, malt, and honey. (b) *Starch*: Peas, beans, potatoes, and cereals such as rice, corn, wheat, oats, rye and barley.

Carbohydrates give heat and energy and produce fat. Fats and carbohydrates are called fuel foods because they produce heat.

4. MINERALS SALTS. Fruit Acids and Vegetables. They aid in the formation of bone, help digestion and are useful in the blood. Greens and salads are rich in minerals and should be used freely.

5. WATER. This is found in all foods, but should be used liberally in its pure form. It carries food to the blood, carries off waste, helps to regulate temperature and is a solvent for food.

NOTE:—For a study of the proportionate amount of each element required and for a table of Food Values, refer to Farmers' Bulletin No. 142, U. S. Dept. of Agriculture, "Principles of Nutrition and Nutritive Values." Also to chapter on Food and Health, Ritchie's Primer of Physiology; Home Economics Circular, No. 1, Iowa State College of Agriculture, Ames, Iowa; U. S. Dept. of Agr. Bulletin No. 28, "Composition of Foods" and to Prof. Murray's "Economy of Nurition," (A. B. Co). Dr. Langworthy's Food Charts, 1 to 14, may be had for $1.00, sent to the Superintendent of Documents, U. S. Dept. of Agriculture. These 14 large colored wall charts are invaluable to any school.

3. HOW?

COOKING.

Weights and Measures.

Abbreviations: c. means cup; tsp., teaspoon; tbsp., tablespoon; 4c. flour = 1 lb; 2c. sugar = 1 lb.; 2c. butter = 1 lb.; 16 tbsp = 1 c.; 2 tbsp. butter = 1 oz.; 4 tbsp. flour = 1 oz.

BREAD MAKING.

Light Bread.

Scald the milk or boil the water to kill any germs that may interfere with the action of the yeast. Put the shortening, salt and sugar into the mixing bowl and pour the hot liquid over them. Cool till lukewarm, (hot liquid will kill yeast). Soften the yeast cake in lukewarm water, and add to the other liquids. Add flour gradually, stirring with a knife. When the dough is stiff enough to handle, turn out on a floured board and knead until soft and elastic, so as to mix thoroughly. Place in a buttered bowl, buttering the top of the dough to prevent a dry crust from forming. Cover and allow to rise in a warm place until double its bulk. Then knead until all gas bubbles are small and evenly distributed through the dough. Shape into loaves and biscuits, and place in greased pans. Allow it to rise in pans until double its bulk. Bake the biscuits 25 to 35 minutes, and the loaves 45 to 60 minutes in a hot oven. When the bread is baked, remove it from the pans and place it on a rack to cool. Cover with a clean, thin cloth, but do not wrap. Scald the bread box, and when the bread is cold, put it into the box with a close fitting cover.

Receipts for Light Bread.

Mix and bake according to the above directions.

1 cup water.
1 cup milk.
2 tbsp. sugar.
¼ yeast cake.
2 tbsp. shortening.
2 tsp. salt.
5½ cups flour.

Biscuit.

Batters and doughs are made to rise by adding some material which will make bubbles of gas in the mixture. These bubbles are caught in little sacs of the gluten in the flour, and when the baking begins, the heat causes the imprisoned bubbles to expand, thus making the mixture rise. Pure baking powder is composed of cream of tartar, bi-carbonate of soda, and starch. Cheap baking powders contain alum, and

are injurious. Good baking powder can be made at home by the following receipt:

2¼ lbs. cream tartar.
1 lb. bi-carbonate of soda.
1 to 2 c. flour or corn starch.

Weigh the materials, mix them, and sift at least seven times. Store in tight jars or cans ready for use.

Baking Powder Biscuits.

1 pt. flour.
1 tsp. baking powder.
¾ c. milk.
½ tsp. salt.
2 tbsp. shortening.

Mix and sift dry ingredients. Work in the shortening until the mixture resembles fine meal. Add the liquid gradually to make a dough as soft as can be handled. Mix with a knife or spoon. Toss on a floured board, and roll until half inch thick. Cut with a floured biscuit cutter. Place close together in a greased pan and bake in a hot oven until well cooked. Be sure to brown both top and bottom. If biscuits are not brown on the bottom when removed from oven, place the pan on top of the stove until they are. Never leave the middle of the biscuits imperfectly cooked. The crust is the part most easily digested. Eating too much crumb, especially rare crumb, will cause indigestion.

Butter Milk Biscuit.

1 pt. flour.
1 tsp. salt.
1 tsp. soda (varying with the acidity of the buttermilk.)
1 tbsp. shortening.
¾ c. buttermilk.

Mix as for baking powder biscuits, making the dough a little smoother and stiffer. Roll from ¼ to ½ inch thick, cut and bake as before. If biscuits are yellow, use less soda.

Corn Bread.

¾ c. corn meal.
¾ c. flour.
3 tsp. baking powder.
1 tbsp. sugar.
1 egg.
½ c. boiling water.
¾ tbsp. melted butter.
¾ tsp. salt.
¾ c. milk.

Scald the meal in ½ c. boiling water. Add milk, dry materials sifted together, egg and melted butter. Beat well. Pour into a greased pan and bake in a hot oven.

Wheat Muffins.

¼c. butter.
1 egg.
1½ c. flour.
¼ c. butter.
¾ c. milk.
3 tsp. baking powder.

Cream the butter, add sugar and egg which has been well beaten, sift baking powder with flour, and add to first mixture, alternating with milk. Bake in buttered muffin pans until well browned. The baking ought to last a half hour.

Write U. S. Department of Agriculture, Washington, D. C., for the following Farmers' Bulletins for further study: No. 298, Food Value of Corn and Corn Products. No. 389, Bread and Bread Making.

Eggs.

Eggs should be washed as soon as brought in, and kept in a cool place. Water in which eggs are cooked should not boil, but should be kept at a temperature of from 180° to 160°.

Soft Boiled Eggs.

(1) Put them into boiling water and immediately remove the pan from the stove. They will be cooked in from 5 to 10 minutes.

(2) Put the eggs into cold water and put them on the stove. When the water reaches boiling point they are ready to serve. The first method is the best.

Hard Boiled Eggs.

Put the eggs into boiling water and remove the pan immediately to the back of stove where it will not boil. Leave for forty five minutes

Scrambled Eggs.

1 egg.
1 tbsp. milk.
½ tsp. butter.
⅛ tsp. salt.
1-16 tsp. pepper.

Beat the egg thoroughly. Add salt, pepper, and milk. Melt the butter in pan over moderate heat. Pour in the mixture and cook slowly, continually scraping from bottom of the pan. When creamy turn out on a hot dish and serve at once.

Omelet.

4 eggs.
½ tsp. salt.
2 tbsp. butter.
4 tbsp. milk.
½ tsp. pepper.

Beat eggs slightly, just enough to blend yolks with the whites, add milk and seasonings. Put the butter in a moderately hot pan and when

melted turn in the mixture. Cook slowly on the top of the stove. When evenly brown, fold over and put on a hot dish. Serve at once.

Fried Eggs.

NOTE:—Don't fry them. * * * * Not wholesome.

Refer to U. S. Dept. of Agriculture Bulletin No. 128, Eggs and Their Uses. Also to Short Course Class Notes No. 4., Iowa State College, Ames, Iowa.

SOUPS.

I. Cream Soups:

1. Source of fuel food.
2. Served with a light meal rather than a heavy meal.
3. Give an opportunity to use great variety of vegetables.
4. Give an opportunity to use fish and oysters.
5. Give an opportunity to increase food value by adding egg.

II. Stock Soups:

1. Clear stock soups are used with heavy meal as an appetizer.
2. Stock, with the addition of meat and vegetables, gives added food value.

Brown Soup Stock.

2 lbs. meat (¼ bone).
2 pts. cold water.
¾ tsp. salt.
6 peppercorns.
1 sprig parsley.
2 cloves.
⅛ sweet pepper.
¾ tsp. sweet herbs.
2 tbsp. each of carrot, onion and celery.

Wipe and cut the meat in inch cubes. Brown ⅓ of meat in hot frying pan in marrow from marrow bone. Put remaining two-thirds with bone and fat in soup kettle, add cold water and let stand for 30 minutes. Place on back of range, add browned meat and heat gradually to boiling point. As scum rises it should be removed. Cover and cook slowly below boiling point three hours. Add vegetables and seasonings 1½ hours before removing stock from stove. Strain and cool as quickly as possible.

Cream of Vegetable Soups (Puree).

A puree is made by adding the pulp of a cooked vegetable to milk or cream. The milk is thickened, (white sauce) with flour or corn starch in order to bind the solid and liquid parts of the soup together.

Cream of Pea Soup.

2 c. peas.	2 tbsp. butter.
1 tsp. sugar.	1½ tbsp. flour.
3 c. milk.	1 tsp. salt.
¼ tsp. mustard.	½ tsp. pepper.

Drain liquor from peas. Rub peas through a sieve. Add seasonings. Melt butter, add flour and blend thoroughly. Add milk gradually. Add the pea mixture. Cook until it thickens. Strain through a sieve.

PRINCIPLES OF MEAT COOKERY.

1. Heat hardens protein.
   Sear meat to retain juices.
   Cook slowly to make tender.
   Extract albumen by soaking in cold water.
2. Heat decomposes fat.
   Cook fats at a low temperature, (bacon, pork chops).
   Remove fat from pan as fast as it fries out of the meat.

Aims in Cooking Soups.

1. To extract the juices, as in soups, broths and beef teas.
2. To retain the juices, as in broiling, roasting, boiling and frying.
3. Combination of both as in stewing and brazing where part of the juices are retained and part extracted.

Amount Required.

Amount of meat needed by system depends upon age, occupation, climatic conditions and condition of system.

Pan Broiled Steak.

Heat skillet. Scrape steak lightly to remove any pieces of broken bones. Wipe with damp cloth. Place steak in hot skillet. Turn from side to side until well seared. Heat platter. Move to cooler part of stove or lower the heat. Cook slowly until pink inside. If the steak is more than 1 inch thick, cover the skillet after the steak has been thoroughly seared. Add salt and pepper just before taking from the pan. Place on the hot platter. Add lemon sauce or plain butter. Garnish with slices of lemon and sprigs of parsley if you wish.

Bacon.

In order to slice bacon very thin, it must be cold and firm. Cut off the rind and tough lower skin, then slice very thin. Place the bacon in skillet and turn until it is brown. Drain fat from pan as

fast as it fries out. Do not serve bacon that looks greasy. It must be dry. Save the bacon fat for cooking purposes. The bacon slices may be put into a baking pan, and cooked in the oven. Bacon should be thoroughly drained before taking to the table. It should be crisp and evenly browned.

NOTE: Write to U. S. Dept. of Agriculture for Farmers' Bulletin No. 391, The Economical Use of Meat in the Home; and No. 31, Meats, Composition and Cooking.

VEGETABLES.

Vegetables are of great value in the daily diet.

1. They give muscle-building food.
2. They give fuel food.
3. They give mineral matter.
4. They give bulk.
5. They give flavor.
6. They give water.

Suggestions for Cooking.

1. Allow 1 tsp. salt to 1 quart water.
2. Use enough water to cover vegetables.
3. Cook highly flavored vegetables uncovered.
4. Cook starchy vegetables in boiling water.

Refer to U. S. Dept. of Agriculture Farmers' Bulletin No. 121, Beans, Peas, &c., as Food, also to State College of Agriculture, Athens, Ga., Bulletin No. 6.

General Directions for Making Sauces.

Put butter in sauce pan or double boiler, stir until melted and bubbling; add flour mixed with seasonings, and stir until thoroughly cooked. Gradually pour on the liquid, stirring constantly. Cook until smooth and glossy.

I. Thin White Sauce—White Sauce for Soups.

1 tbsp flour.
1 tbsp. butter.
1 c. hot milk.
½ tsp. salt.
⅛ tsp. pepper.

II. Medium White Sauce—White Sauce for Vegetables.

2 tbsp. flour.
2 tbsp. butter.
1 c. hot milk.
½ tsp. salt.
⅛ tsp. pepper.

III. Thick White Sauce—White Sauce for Croquettes.

4 tbsp. flour.
4 tbsp. butter.
1 c. hot milk.
1 tsp. salt.
⅛ tsp. pepper.

Gravy.

4 tbsp. flour.
4 tbsp. fat.
2 c. stock.
1 tsp. salt.
¼ tsp. pepper.

Lemon Sauce for Fish.

3 tbsp. flour.
5 tbsp. butter.
1½ c. water.
½ tsp. salt.
⅛ tsp. pepper.
2 tbsp. lemon juice.

(Follow directions for making sauces).

FRUITS.

Fruits furnish real food values in the form of carbohydrates, protein, mineral matter, and water. They relieve thirst and help to remove waste because of their high per cent of water. Through the organic salts in them they improve the quality of the blood and prevent the acidity of the urine. They are laxative and prevent constipation. They stimulate the appetite, aid digestion, and give value to the diet. They are among the most important, as well as cheapest, foods, and should form a part of every meal, especially of breakfast. Most fruits are also very helpful eaten late at night.

Baked Apples.

(1) Pare and core the apples, fill the cores with sugar, dot some butter over the apples, put in a pan with a little water, and bake slowly but well.

(2) Wash the apples well, stick some holes in the skin, put them in a pan with about an inch of water and bake for an hour or an hour and a half.

Apple Tapioca Pudding.

6 sour apples.
1 qt. boiling water.
1 c. pearl tapioca.
½ c. sugar.
½ tsp. salt.
1 tsp. cinnamon.

Soak tapioca four hours in cold water. Drain and cook in salted boiling water until soft and transparent. Pare and core the apples and arrange in a baking dish. Fill the cavities with sugar and spice, mixed together. Cover the apples with the tapioca. Bake slowly until tender. Serve hot with cream and sugar.

Apple Sauce.

8 apples. 1 c. water.
1 c. sugar. $\frac{1}{8}$ tsp. cinnamon.

Wipe, pare and core apples. Mix water and sugar and boil 5 minutes. Add apples and cook until tender. Add cinnamon.

Apple Snow.

3 egg whites. $\frac{3}{4}$ c. apple pulp.
1 tbsp. lemon juice. 3 tbsp. sugar.

Pare, quarter and core 4 sour apples, place on a plate and cook in a steamer, over hot water, until soft. Press through a sieve and add sugar and lemon juice. Add beaten egg white. Pile in a glass dish and serve with red jelly.

NOTE: For a study of Fruits as Food see "Short Course Class Notes No. 13," Iowa State College, Ames, Iowa.

MENUS FOR RURAL SCHOOL CHILDREN.

BREAKFAST.	DINNER.	SUPPER.
Fruit.	Chicken or ham sandwich.	Soup (light).
Cereal.	Potatoes (boiled or baked).	Rice, with cream and sugar.
Eggs.	Vegetables (beans, peas etc.)	Bread and butter.
Bread.	Fruits or melon.	Syrup.
Butter.	Light pudding or cake.	Stewed fruit.
Syrup.		Light cake and milk.
Milk.		

(Serve dinners on tables in the grove, either together or in parties, under supervision and instructions of the teacher).

NOTE: Menus should vary but be always intelligently planned. Hot soups, as a result of the teaching, may occasionally be served for dinner. The dinner service should occupy a definite period during the noon recess, not less than twenty minutes, and should be orderly. Children should not be allowed to bolt their food. Cleanliness, proper behavior, and good manners should be insisted upon, and due credits should be given for the same.

MENUS FOR THE FAMILY.

Tuesday—A Summer Day.

Breakfast.	Dinner.	Supper.
Berries and cream.	Corn soup.	Cold chicken.
Corn mush, with milk	Stewed chicken.	Cold bread and butter
Breakfast bacon and eggs.	Irish potatoes.	Milk.
Toast.	Corn bread.	Peaches and cream.
Coffee and milk.	Snap Beans.	
(Milk for children.)	Sliced tomatoes, with dressing.	
	Baked apples, with sugar and cream.	

Wednesday.

Breakfast.	Dinner.	Supper.
Apple sauce.	Cream of tomato soup.	Cold ham cut in thin slices.
Rice, with milk and sugar.	Boiled ham.	Cold bread and butter
Fried chicken.	Candied sweet potatoes	Berries and cream.
Wheat muffins.	Cabbage.	Milk.
Coffee and milk.	Berry pudding, with sauce.	
(Milk for children.)		

A Winter Day.

Breakfast.	Dinner.	Supper.
Canned berries	Tomato soup.	Egg and cheese omelet.
Oatmeal and cream	Chicken pie.	Bread and butter.
Bacon strips and eggs.	Baked Irish potatoes	Preserves.
Toast.	Turnip greens. (boiled with small piece of bacon).	Milk.
Butter.	Stewed tomatoes.	
Coffee or milk.	Canned peaches and cake.	

Serving.

It is said that the difference in the food of the rich and the poor lies chiefly in the cooking and serving.

No meal is a success unless the linen is clean, the table neatly set, and the food properly served. One of the most valuable among the early housekeeping lessons is the art of table setting, and should be mastered by every child of ten. It should be taught thoroughly and systematically through definite instructions and careful supervision.

Table Setting.

In setting the table, first cover it with a silence cloth, intended to protect a polished table, to prevent noise, and to save the table cloth from wear. The table cloth should be of good linen or cotton, plain, small figures preferred, large enough to cover the table and fall from ten to twelve inches below its edge. Teach a child to lay the cloth absolutely straight, leaving the margin perfectly even on all sides. The child who learns to lay the cloth properly, forms a habit that will continue through life. One of the chief elements of success consists in the care with which the dishes are placed on the table. The same principles hold true, whether the meal is a simple or elaborate affair. Give definite instructions, first with regard to the placing of the silver. Place each piece so that the end is one inch from the edge of the table, and the pieces absolutely parallel with one another. Place the knives and spoons at the right of the plate, and the fork at the left, and in the order in which they are to be used (an oyster fork should be at the right). The knife blade should be turned towards the plate and the tines of the fork upwards. The glass should be at the tip of the knife, the napkin at the left of the fork, one inch from the edge of the table. The scrap plate and the individual butter should be just above the napkin. The coffee pot and cups are placed at the right of the hostess, and the sugar and cream in front.

Flowers add much good cheer to the table, and for them, a low dish is generally preferable to a high vase.

Serving Meals.

Teach children to wait upon the table, and do it well. This lesson not only makes them useful, but teaches them to be more unselfish and considerate of the comfort of others. In serving a meal the chief thing to keep in mind is simplicity and comfort rather than display and effect. Assign reasons for rules, and fix a few principles firmly in the mind. First, if the child is to place the food in position beside the guest, tell him to pass to right of the guest and place the food at the guest's right hand. If it is food from which the guest is to help himself, tell the

child to pass to the guest's left hand, so that the guest can use his right hand. Caution the child to lower the dish within easy reach when passing the food, and to pass to the right to remove dishes from the table. If a dinner is to be served in courses, have nothing on the table when the guests are seated except the center decorations, glasses, and bread and butter plates. There may also be a place plate if a plate is to be used. If the first course is to be soup, it may be placed on this plate, and the plate may be removed after the soup course. Olives, or nuts, or pickles may be on the table before serving the first course and remain until the end. In general, remove everything from the table which pertains to the course just served before the next course is served. The successful dinner depends upon quality rather than quantity, and much upon the good fellowship which attends the meal. Let the meal be a rest time, where cleanliness, good taste, good simple food, harmony and good manners prevail.

Dishwashing.

Scrape all the food from the dishes and rinse them. Pile all of dishes of one kind together. Soak in cold water the dishes that have been used for milk, eggs, or starchy foods; soak those used for sugary substances in hot water. Wipe greasy dishes with paper, and then soak them in hot water. Clean off the table well, and do not begin to wash until everything is ready. Wash dishes in the following order: glassware, silver-ware, cups and saucers, plates, general dishes. Wash in hot, soapy water: rinse in hot, clear water. Do not allow soap to soak in the dishwater. Wipe the dishes after draining, with clean, dry towels. Do not pour boiling water over glassware. Place tumblers side down in the dishwater. Do not allow wood, bone, ivory, rubber, or pearl handles to soak in water. Do not continue to wash in dirty water. Change it when it becomes dirty.

Kettles and pans should have water put in them as soon as empty after cooking. Do not use a knife or coarse scouring soap to clean enameled ware.

Clear up as you work, putting soiled utensils of a kind together and putting them in soak until ready to wash them. Put away all materials and utensils in their proper places. Leave everything you have used clean, and the room in perfect order.

Canning and Preserving.

The "high cost of living," so much complained of, can be reduced materially on the farm at least by canning and preserving fruits, vegetables, and other foods. We probably waste, or allow to go to

waste, nearly enough to live upon. Thrift and economy are matters of education and training. Too much attention can hardly be given to the conservation and preservation of food stuffs. Give careful study to the Pure Food Laws of the State and nation. Copies of these may be had free by writing the Dept. of Agriculture. For further studies get the following free Bulletins: From The State Agricultural College, Athens, Ga.: The Canning of Fruits and Vegetables, Bulletin No. 191; Girls' Club Work in Georgia, Bulletin No. 6. From U. S. Department of Agriculture, Washington, D. C.: Canning Vegetables in the Home, Farmers' Bulletin No. 359; Canned Fruit, Preserves and Jellies, Farmers' Bulletin No. 203; Canning Peaches on the Farm, Farmers' Bulletin No. 426.

This treatment of cooking has been very largely selected and adapted from the Bulletins of The Iowa State College of Agriculture, but thanks are also due to Hampton Institute, for permission to use its bulletins from which some extracts were made. Some valuable receipts were copied from them. Extracts were also made from "Lessons in Cooking and Sewing for Virginia School Girls."

SEWING.

It is an error to suppose that all girls are taught sewing at home. Some of them are, but the majority never learn. Those who can sew well should be employed in helping and directing the younger girls in the school sewing. If any mothers in the neighborhood are particularly skilled in sewing they should be induced to come to the school and help in teaching the children. Under present conditions, there should not be more than one sewing period a week to which the teacher gives her time, but the girls should be accustomed to sew as seat work when all the book lessons have been learned, or when they are too tired to study. They can frequently begin a piece of work at school, and finish it at home. The teacher should enlist the co-operation of parents and excite emulation among the children by exhibits, honors, etc. It is not only unnecessary, but inadvisable, to have children learn to sew on samplers or to make sewing books. Let them make something to use or wear from the very beginning. The use of a little good judgment in the selection of articles to make will prevent an appreciable waste of material, but even though waste of something is necessary, it would better be cloth than the child's interest or energy. The sampler and the sewing book are frequently so exhaustively and exhaustingly done that they are the beginning and the end of the child's sewing.

TOOLS: Needles, thread, scissors, tape measure, thimble and emery ball.

General Suggestions for Sewing.

Sit in an erect position. Choose an aluminum or celluloid thimble that fits the second finger of the right hand and always wear it while sewing. Never sew without it. Use a short thread. Make the stitches small and even. Keep a pair of sharp scissors, which are used for nothing else. Choose thread and needle to suit the kind of cloth used. Finish all raw edges on the wrong side of the garment. Always make the wrong side look as neat as possible. Anything worth doing at all is worth doing well, so all sewing should be done carefully.

Basting.

Basting is loose sewing, with loose stitches used as a guide for sewing and holding cloth in place. The more carefully the basting is done the less the sewing will need be ripped and done over.

Even Basting.

In this, the stitch and the space between are of the same length. It is strong, and is used for seams in a tight garment.

Uneven Basting.

In this the stitch is long, and the space between the stitches short. This basting is not strong, and is only used to hold two pieces of cloth in place while being sewed.

Back Stitch.

Take one short stitch. Begin the second stitch in the middle of the first. Extend it to one-half the length of the first stitch. Begin the third stitch in the middle of the second, and proceed as before. This should be used in a seam that is required to bear some strain.

Running Stitch.

Place the two edges of the cloth evenly together. Baste with uneven basting one-fourth inch from the edge of the cloth. Take one short stitch at the right edge of the cloth and just above the basting. Draw the thread through this three times so as to fasten the end. Take up three even stitches on the needle and pull the thread through the cloth, but not so tight that the cloth will be gathered. Continue the seam, taking three stitches on the needle each time and keeping the stitches in a perfectly straight line. To fasten the end of the thread, sew over the last stitch three times and cut the thread. Do not break it.

This stitch is used in joining two pieces of cloth that will not have much strain, for making tucks, and for gathering cloth.

Practice.

1. Sew the seams in a straight apron.
2. Gather the apron at the top.
3. Sew the seams in an underskirt.
4. Tuck the underskirt.

Seams.

1. Overhand Seam.

Hold the edges firmly between the thumb and finger of the left hand. Take up two threads of the selvage with the needle, and pull the needle straight toward you, drawing the thread firmly. Take small stitches and keep them even. This is used for selvage edges.

2. French Seam.

Turn the seam to the right side of the garment. Trim the frayed edges. Sew the seam one-fourth of an inch from the edge. Turn the seam and press the edges firmly on the wrong side. Baste the cloth evenly on the wrong side, and just below the edges of the seam. Turn the cloth on the right side and press the seam firmly with a thumb and

finger. Be careful that the frayed edges of the seam do not show on the right side. This is the best seam to use for shirt waists, underwear, or straight seams in cotton dresses.

3. Felled Seam.

Place the edges of the cloth together evenly. Begin at the right and make the seam one-third of an inch wide. When you have finished sewing the seam, trim the under edge until it is one-fourth of an inch wide. Fold the upper edge until it is just wide enough to cover the under edge. Press the upper edge down firmly and hem to the garment with small even stitches.

Practice.

1. Make a pillow case.
2. Use the French seam on underwear.
3. Use it on a cotton dress.
4. Make a cooking apron.
5. Use the felled seam on a corset cover.

Hemming.

To Fold: Turn the raw edge of the cloth over just one-fourth of an inch. To do this, begin at the right edge, taking the folded edge between the thumb and finger of the right hand, and laying the fold with the left hand. Lay the folded edge in plaits, and pinch between the thumb of the right hand and first finger of the left hand. Hold the folded plaits between the thumb and finger of the right hand, and pinch them hard, to hold the folded edge in place.

To Make the Second Fold: To make a one inch hem, cut a strip of stiff paper one inch wide and three inches long. Measure down from the folded edge the width of this paper. Make a turn in the cloth, and make a crease in the new folded edge. Continue to make this fold, and hold it in place with the thumb and finger as you did for the first fold. Be sure to use the paper measure as a guide. Baste the edge in place with uneven basting.

To Sew the Hem: Hold the hem over the first finger of the left hand. Hold it in place with the thumb and second finger. Push the needle through one thread of the under part of the hem, and then in a slanting position through the edge of the upper part of the hem and pull the thread through. Keep all of the stitches slanting, and keep them parallel with each other. Be sure not to pull the thread tight enough to gather the cloth.

French Hem.

To Fold: Fold the cloth to the wrong side, make a fold one-fourth of an inch wide, and press it firmly until the edge is well creased.

To Make the Second Fold: Measure down from the folded edge three-fourths of an inch, turn the hem to the wrong side of the cloth and make a crease at the one-fourth inch mark.

To Make the Third Fold: Fold the entire hem back toward the right side of the cloth and crease at the lower fold.

To Sew the Hem: Take up one thread of each folded edge and pull the needle straight toward the chest. Keep the stitches parallel and do not draw them firmly enough to gather the cloth. If the work is well done the stitches will be almost invisible. This hem is good to use on table linen.

Rolled Hem.

To Fold: Hold the raw edge of the cloth firmly between the thumb and finger of the left hand and by moving the thumb make a small roll along the edge of the cloth. After one inch has been rolled begin to sew, keeping the roll small and even.

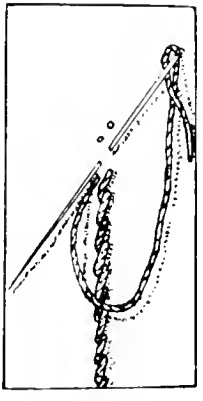
To Sew the Hem. Use a No. 9 needle and a No. 90 thread. Insert the needle into the under side of the roll, taking up only one thread and push it through the upper side, taking again only one thread. Continue stitch by stitch making the stitches even and taking up as little cloth as possible on each stitch. The roll should be small, firm and round.

Practice.

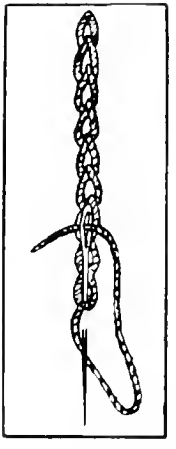
1. Hem an underskirt, a cooking apron, and a gingham dress, with a plain hem.
2. Hem table napkins with the French hem.
3. Hem a muslin ruffle with a rolled hem.

Ornamental Stitches.

Outline Stitch: Hold the thread over the left forefinger and work from you. Keep the thread downwards under the thumb, and to the right of the needle. Bring the needle through to the right side of the material at the lower end of a traced line. Take a long stitch ahead on the traced line and a short stitch back through the material. Continue in this way, being careful not to draw the stitches tighter than the cloth.



Making the Outline Stitch.



Making the Chain Stitch.

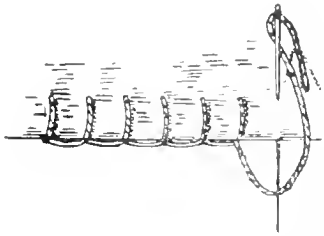
This stitch is used for outlining solid embroidery and for making simple designs.

Chain Stitch.

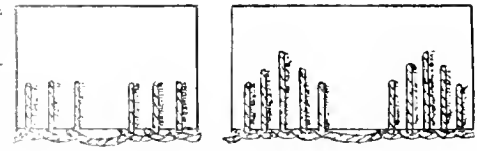
Hold the material across the forefinger of the left hand. Work towards you with the needle pointing toward the chest. Draw the needle through to the right side of the material, holding the thread under the left thumb. Reinsert the needle in the same place from which it came out. Bring it through one-eighth of an inch below and over the thread to form a loop. Continue in this manner, taking one stitch below the other, keeping the stitches vertical and regular. This is used on towels, face cloths, bags, underclothing, and for marking linen.

Blanket Stitch.

Begin at the left hand corner, and work from left to right, holding the edge of the material toward you. Insert the needle one-eighth to one-fourth of an inch from each edge, and take two or three small running stitches to the edge. Fasten the stitch by making a backward stitch over the last running stitch. Hold the thread under the thumb of the left hand and insert the needle again in the same place. Draw it through and make a loop over the thread as in the figure.



Making the Blanket Stitch.

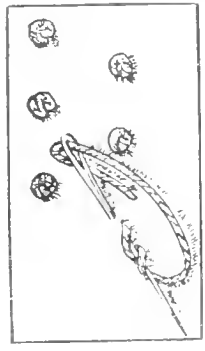


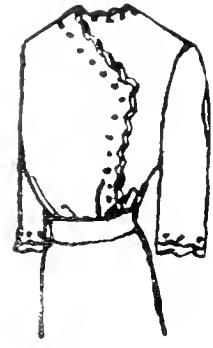
A Variation in Blanket Stitch.

Take the next stitch by holding the thread down with the thumb. Insert the needle at the same height as the last stitch and as far to the left as desired. Draw the needle through the cloth and over the thread to make the loop. Continue the stitches at the same height and same distance apart. To turn the corner neatly, take three stitches in the same hole. To fasten the thread, take two or three running stitches under the last upright stitch with one back stitch and cut it off. To begin with a new thread put the needle under the last stitch as in beginning the work, bring the new thread through the loop, and proceed as before. This is used to finish and decorate the raw edges of flannel or woolen material which is too thick to hem or fold well.

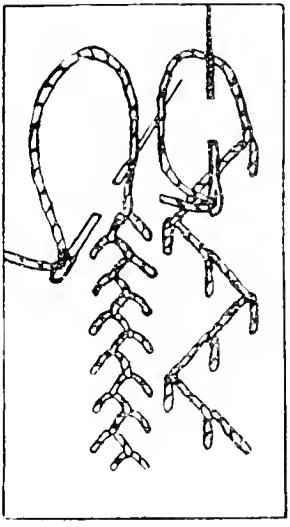
French Knots.

Hold the material over the left forefinger, and bring the needle up from the wrong side at the place desired for the knot. Take a small back stitch, leaving the needle half way through the material. Take the thread where it comes through the material, and wind it three or more times around the needle. Hold this coil of thread on the needle under the left thumb and draw the needle slowly through the coil. Then insert the needle where it was inserted for the back stitch. Bring the needle through the material where the next stitch is to be, and continue as before. This is under on underclothing, wash waists, fancy neckwear, linen table pieces, and sofa pillows. A light blue or pink linen dress may be decorated with a row of white linen French knots.





Feather Stitching.



This is used on such articles as underclothing, jabots, collars, aprons, fancy bags, dust cloths, traveling cases, bureau scarfs, etc.

Button-Holes.

To Cut the Button-Hole: If the button is flat, the button-hole should be as long as the button is wide. Measure the width of the button on a slip of paper Cut the paper at your measure. Place this paper on a double fold of cloth, parallel with the upper edge, and one-fourth inch from the side of the cloth. Place a pin at each end of upper edge of the paper. Fold the cloth from one pin to the other. Place the sharp point of the scissors in the pin hole which is farthest to the right. Cut slowly along the fold till you reach the pin which is nearest the edge of the cloth

To Begin the Button-Hole: The first step is to place a bar around the edge of the button-hole in order to strengthen the button-hole and to act as a guide when you are trying to get your stitches even. Place the button-hole over the first finger of your left hand, holding it horizontally in place with the thumb and second finger. To begin the bar, insert the needle through the right end of the button-hole being careful to hold the needle at right angles with the hole. This stitch should be one-eighth of an inch above or below the button-hole. Turn the button-hole so that the left end is held over the first finger of the left hand. Insert the needle through the left end, keeping the stitch just even with the stitch at the right end. Pull the thread until it is smooth but leave two inches of it hanging loose from the right end of the button-hole. Turn the button-hole again, and hold it so that its right

end is held over the first finger of the left hand. Take this stitch through exactly the same holes as you did the first stitch.

To Work the Button-Hole: Place the button-hole so that the right end is held over the first finger of the left hand, holding it in place with the thumb and second finger. Place the needle close to the right edge of the button-hole, keeping it at right angles with the hole. Take one stitch just long enough to cover the bar. Take hold of the thread from the eye of the needle, and pass that around the point of the needle from the right. Pull the thread into place so that it will be just as tight as the cloth, but no tighter. Take the second stitch exactly the same distance from the edge as the first and as close to the first as you can get it. Continue until the lower edge is covered.

To Turn the Curve: This will decide whether the button-hole is good or poor. The third stitch must be exactly parallel with the edge of the button-hole and half way between the upper and lower edge. The first and second stitches divide the space between the third and lower edge of the button-hole into exactly three equal parts. The fourth and fifth stitches correspond exactly with the second and first.

To Make the Upper Edge: Turn the button-hole so that the left end is over the first finger of your left hand, thus placing the unworked edge at the bottom. Work this edge in exactly the same way as the lower edge. Make the turn as before.

To Fasten the Thread: Turn the button-hole to the wrong side. Pull the needle and thread through to the wrong side. Take four short firm stitches through the lower fold of the cloth. Place the thread around the needle once. Pull the needle up through that loop and cut the thread. Cut also the loose end of thread that was left on the upper edge.

To Sew on the Button.

Place the button one-half inch from the edge of the band. The button will be less apt to pull off and pull a part of the cloth with it if it is fastened to the cloth loosely. To do that place two pins across the bottom as shown in the picture.

Select a needle that is right for No. 40 thread. Double the thread and place a firm knot at the end. Pass the needle through the button

at 1. Pull the thread up through 3 and down through 4. Continue in this regular order until the holes are full of thread. Take four firm stitches through the bunch of threads at the under side of the cloth and pull the needle firmly through the thread. Cut the thread close to the cloth.

Care of Clothing.

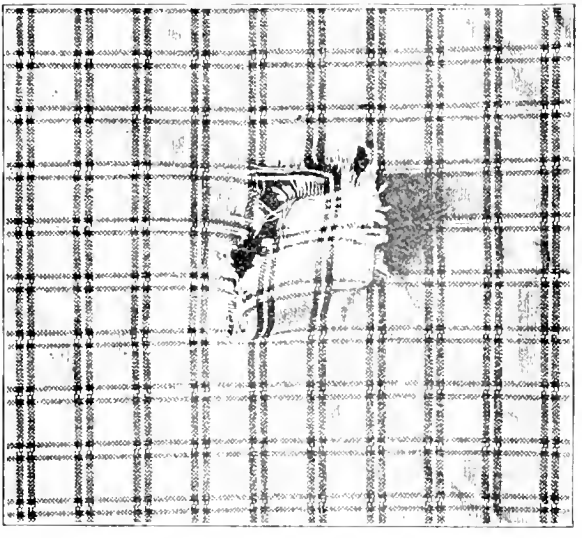
1. Never wear a garment that lacks a button. 2. Never wear a garment that is ripped. The ripped place will ravel and be hard to mend if it is not sewed at once. 3. Never wear a garment with hooks and eyes lacking. 4. Never wear a garment which is torn. Mend it as as soon as you can find a needle and thread. The torn edges will soon ravel, be unsightly and hard to mend. 5. Never allow stains to remain on garments without trying to remove them.

Darning.

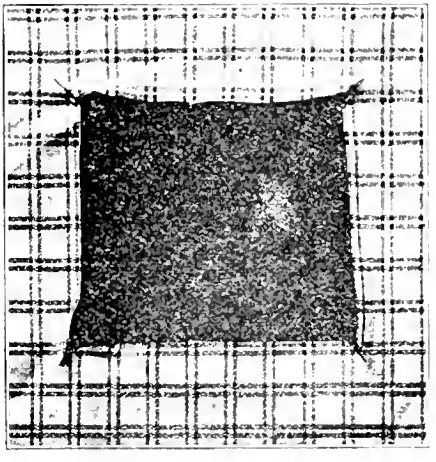
Trim the frayed out edges. Run your thread across the opening to take the place of the warp. When all the threads have been run take three small stitches in the edge of the cloth, placing the hole over some hard body such as a darning ball, and hold it so that the hole will not be stretched out of shape. Take three small stitches opposite the first three, and draw the third as tight as the first warp thread was drawn. Place thread after thread in this way, until the hole is covered with warp thread being careful to keep the threads close to each other and to take the beginning stitches at equal distances from the edge. To fill in the woof threads, take three small stitches at the side of the hole nearest the last warp thread. Slip the needle under the first warp thread, over the second, under the third, over the fourth, working all the way across the hole in this way. Take three small stitches in the opposite side. Turn the work and go back in the same way. Be careful to keep the warp threads close together so that the darning will be firm and solid.

Overhand Patching.

If the garment has a ragged tear like the one in the picture, cut the

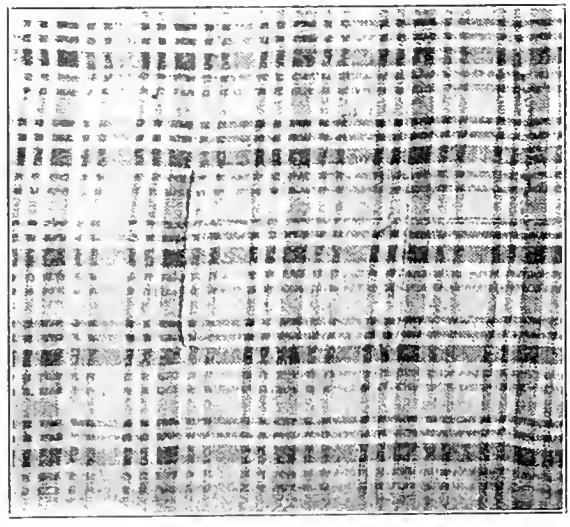


cloth until you have a perfectly square hole, as shown in the next picture.



Make a diagonal cut in each corner one-half inch in length as in the picture. Turn each edge of the square hole to the wrong side, making the width of the hole equal to the length of the diagonal cuts in the corner. Cut a square patch that is one inch larger than the hole after

the fold has been made on each edge. Make a one-half inch fold on each edge of the patch. Turn the garment to the wrong side, fit the upper left corner of the patch into the upper left corner of the hole, holding that corner of the patch firmly in place with the thumb and finger of the left hand. Be careful to make the upper right corner of the patch to exactly fit the upper right corner of the square hole. Work with overhand stitch until the patch is sewed in place. Overcast all of the raw edges.



WHEN THE TEAR IS PROPERLY PATCHED.

This work is mainly composed of selections from the various excellent bulletins of the Iowa State College of Agriculture. Thanks are also due this institution for the loan of the cuts from which the illustrations are made. For some of the opinions expressed, however, the Iowa State College is in no way responsible.

MANUAL TRAINING.

In the following outline for manual training, the attempt has been made to suggest only such work as can be done in a school of from one to three teachers with very small equipment. Much of it has been actually done in a school of one teacher and seven grades, with improvised material and borrowed tools.

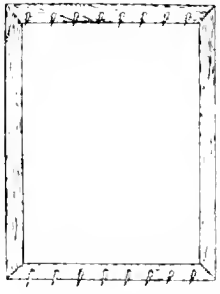
The dominant purpose in all the work is to make the school react upon the home, and to vitalize the usual school studies by connecting them with manual activities. Much of this work can be done by the children as seat work between the recitations and late in the afternoons when they are too tired for book work. Some of it can be begun in the school and finished at home.

Sand Work.

Have three or four wagon loads of clean sand put into the school yard. Tell the little children stories and have them illustrate the stories in sand forms. Have older children make forms of land and water. Have the children bring box tops, fill them with sand, and set up scenes, such as Indian, Esquimaux, and Japanese villages. Have sand table for geography and history.

Weaving.

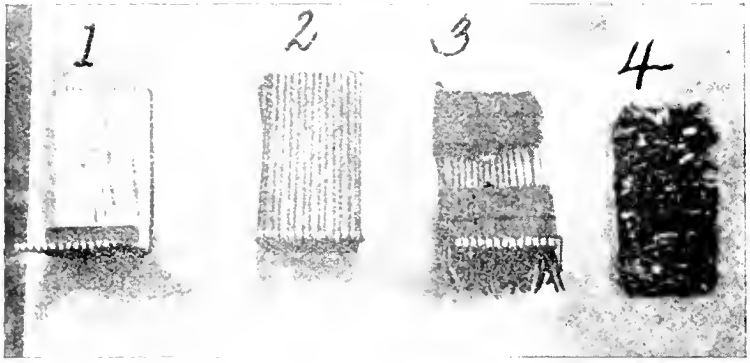
Have older children make wooden looms as follows: Get 40 inches of lumber one inch wide and one-half inch thick, cut this into two twelve-inch and two eight-inch strips, nail the eight-inch over the twelve-inch and two eight-inch strips. Nail the eight-inch over the twelve-inch strips.



Loom.

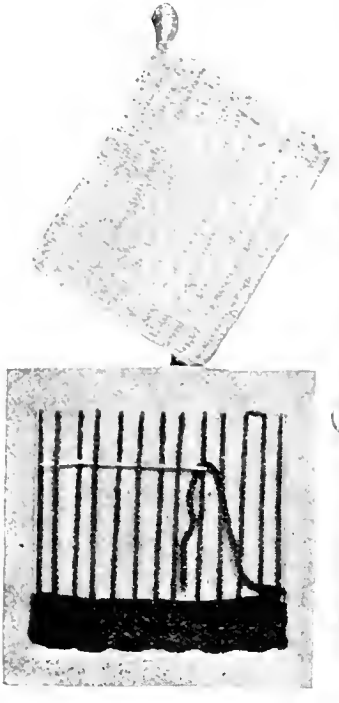
Drive headless tacks one eighth of an inch apart across the eight-inch strips, taking care that there are pairs of tacks opposite each other. (Use ruler). Get heavy cord and tie from tack to opposite tack. This gives the warp for the rug. For a shuttle, take a piece of wood 10 inches

long, one inch wide, and as thin as possible, bore a hole in one end large enough to admit very coarse wool, jute, or strips of cloth. When threaded, pass the other end under one thread of the warp and over another, entirely across the loom. Draw the filling through and beat it in place with a piece of wood, similar to the shuttle, which has been previously passed in as the shuttle was, at the lower end of the loom. Very crude looms for the little children may be made of chalk boxes, using the dovetailing instead of tacks.

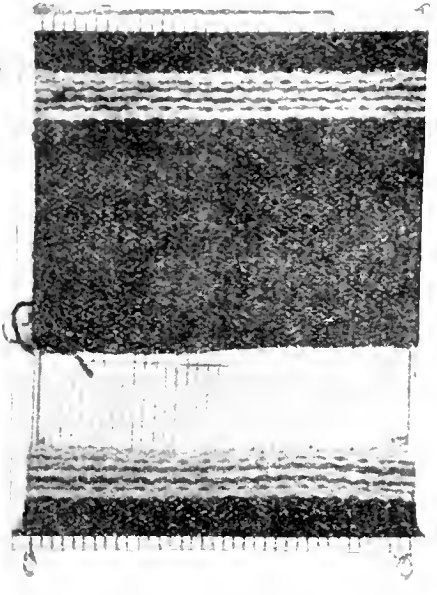


Let the children weave rugs for doll-houses and iron-holders, pan-holders, mats, etc., for their homes. In some schools, looms six feet by three feet have been used to weave actual rugs for the school and home. Rags can be stripped up, sewed together and dyed for the filling. Hanks of jute can be bought from Milton Bradley Company, Atlanta, Ga., at forty cents per pound, one pound weaving at least twenty small rugs.

The loom below is somewhat more elaborate than the simple one described, but the children can easily make it.



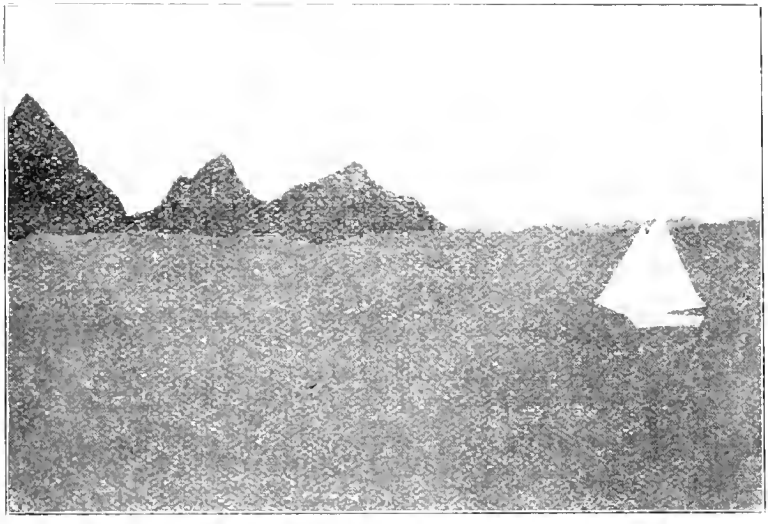
A Card-board Loom and Holder.



A Carpet-yarn Rug.

Paper and Cardboard Work.

Give the children colored paper and without allowing them to draw outlines, have them tear out free-hand figures, such as trees, houses, human forms, etc. Have them combine these in a picture and paste on a neutral tinted back-ground of card-board.



Paper Cutting.

Have each child bring a pair of scissors to school, and cut paper free-hand, for a similar purpose. Get from old magazines, pages with pictures, and have the younger children cut these out and carefully combine them in new pictures. Let them cut out and dress paper dolls.

Paper Folding.

Have children fold drinking cups, candy boxes, cornucopias, flower baskets, lamp lighters, etc.

Cardboard Construction.

Have older children to make scrap-baskets, lamp-shades, work-baskets, etc. Have younger children make card-board furniture.

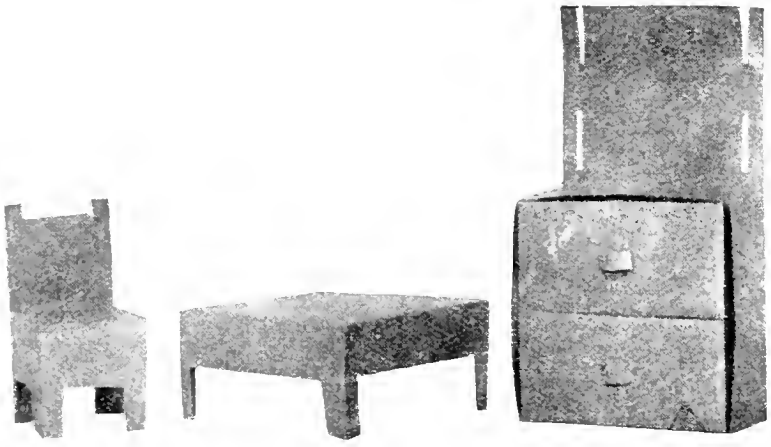
Toy Lantern.

Material—Heavy paper.

Cut a 6-inch square. Paste bands of black paper ⅜ of an inch wide across the top and bottom of the square. Fold the top to meet the bottom with the bands of black outside. Crease. Beginning on the crease make cuts about ¼ of an inch apart from the crease to the black paper. Paste the ends of the bands of black together to form the top and bottom of the lantern. Cut a strip of black 6 x ⅜ inches for the handle and paste it across the top of the lantern.

Doll's Bureau.

Take a square of heavy paper 8 x 8 inches. Fold this into sixteen squares, then cut and paste into a square box 4 x 4 inches and 2 inches high. For the drawers take two pieces of paper 6 x 8 inches and fold each into twelve squares. Cut and paste each into an oblong box 2 x 2 x 4 inches. If you choose, paste a handle upon each drawer. Put these into the square box, and for the back cut an oblong 4 x 7 inches. Paste this upon the back and upon the 3 inches that come above the bureau. Cut slits and bend the top forward to represent the looking-glass, or paste silver paper upon the back, in the form you wish the glass.



Doll's Chair.

Material Heavy folding paper.

Cut a 6-inch square. Fold this into nine 2-inch squares. Cut across the top of the lower right square, also the lower left square. Find the square in the middle of the top row and cut across both the right and the left sides. Fold this square up towards you for the back of the chair. Fold the remaining squares into the shape of a cube and paste them together. Now cut an oblong 2 x 4 inches and paste on the back of the chair, to strengthen it. At the top of the back of the chair cut out a small oblong, as an ornament.

At the bottom, beginning about ⅜ of an inch from each corner, cut an oblong about 1 inch high, to form the legs of the chair.

Doll's Table.

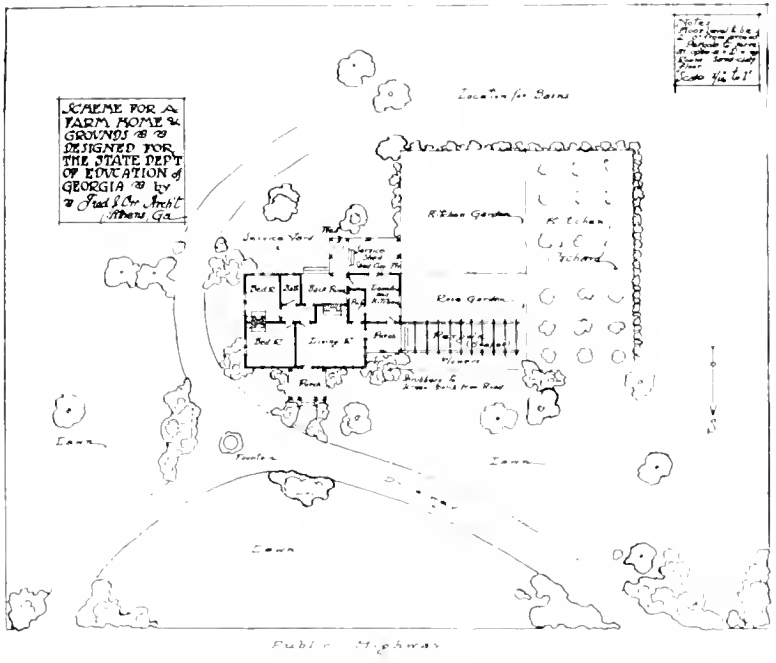
Take an 8-inch square of heavy paper. Fold it into sixteen 2-inch squares. Cut across the top of the lower right square, also the lower left square. Cut across the bottom of the upper right square, also the upper left square. Fold into box form and paste. Use the bottom of the box for the top of the table and at the bottom of each side, beginning ½ of an inch from the corner, cut an oblong about 3 inches by 1 inch. This will make the opening between the legs of the table.

DRAWING.

I Mechanical Drawing.

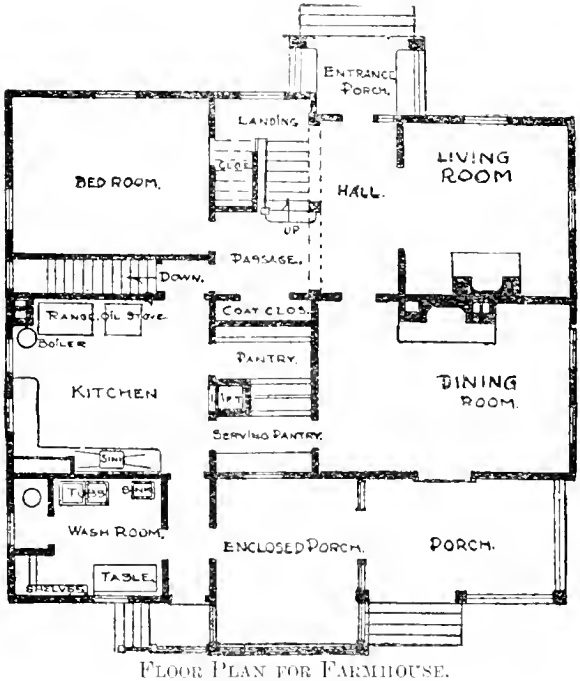
(1) Plans for farm-house, gardens and outhouses. A suggestive plan is given below, but the children will make far simpler ones. They must be allowed as much spontaneity as possible. Arouse some competition and attach honor to best plan. As a preliminary to this exercise, discuss each plan with the children with regard to health, convenience, and beauty.

PLAN FOR FARMHOUSE AND GROUNDS.



(2) Plans for a vegetable garden. For illustration, see "Children's Home Gardens."

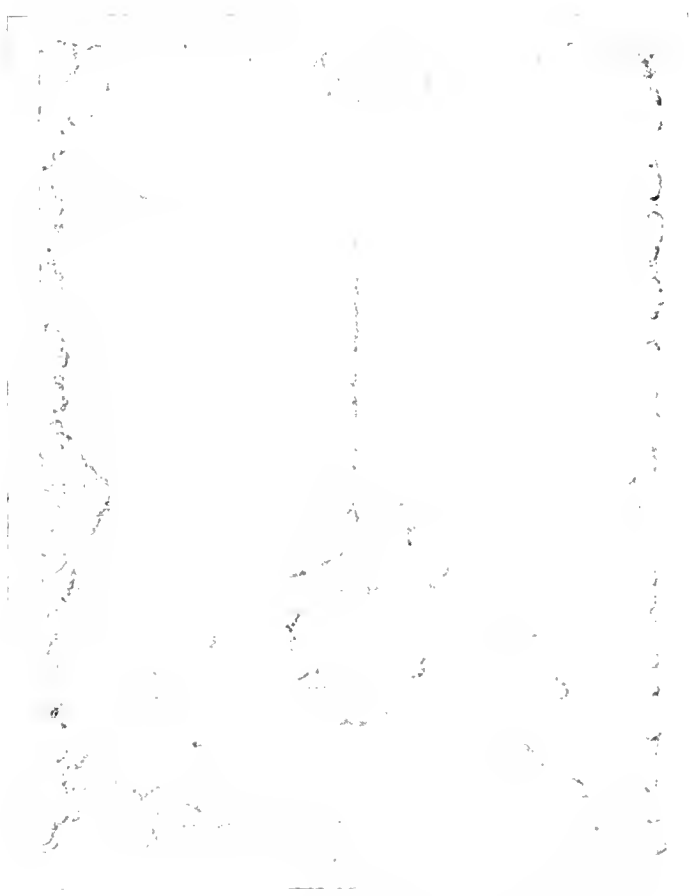
(3) Floor plans for farm homes.



Floor Plan for Farmhouse.

Discuss with the children the exposure to light and air; the arrangement of rooms with reference to health, comfort, convenience and beauty. Have them make plans for houses of from two to seven rooms. Arouse competition, and attach honor as before.

(4) Plans for flower gardens.



Plan for a Five Acre School Ground.

(5) Plans for the arrangement of furniture in bed room, dining room, and kitchen.

Discuss with children suitable furniture and the arrangement of it with reference to convenience, comfort, and beauty. In planning the dining room and kitchen discuss arrangements for saving steps and labor. Have children plan compact kitchen with all conveniences possible to a farm home. Attach especial honor to best plans.

(6) Plans for school and surroundings similar to those for homes.

(7) Floor plans for school similar to floor plans for a home.

(8) Designs for rustic fences, trellises for vines, summer houses, arbors, etc.

(9) Have working drawings made for all wood work.

II Free Hand Drawing, Color Work, and Design.

1. Drawing with crayola, crayograph, pastello, charcoal, or pencil, of common objects, such as flowers, fruits, simple landscapes, boxes, vases, etc.

Cotton Boll.

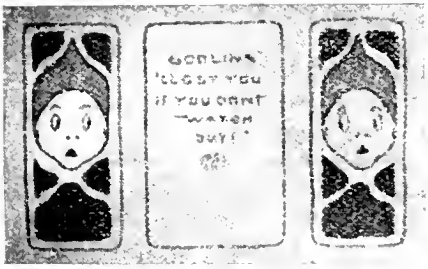
It is not necessary for the teacher to show the pupil exactly how to do this. No drawing should be made on the board for the children to imitate, nor should flat pictures be given them to copy. The teacher should place in view the object, and tell them to draw it, giving suggestions from time to time as to methods.

2. Illustrations of stories and scenes described in literature, on the board, or on paper, with crayola, common chalk or pencil.

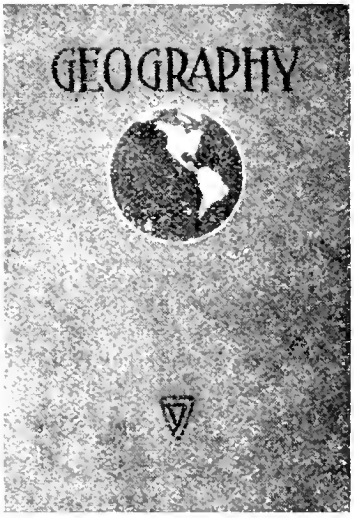
3. Drawing of farm implements and household conveniences.

4. Designs for rugs, wall paper, fabrics, book covers, calendars, Thanksgiving, Christmas, and Easter cards, valentines, posters, advertisements, color schemes for the interior of rooms, and painting and staining on wood.

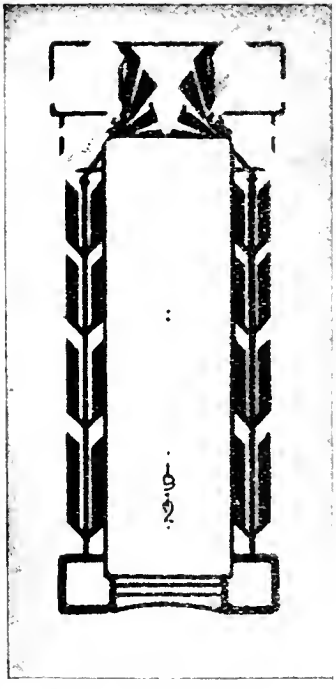
October Calendar.



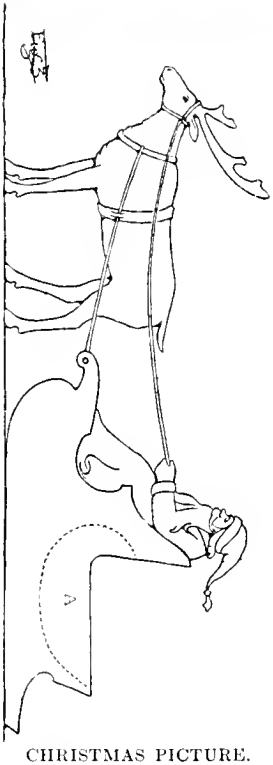
HALLOWWE'EN POST CARD



BOOK COVER.



EASTER CARD



CHRISTMAS PICTURE.

In this work, the older children can use water colors which may be bought for five cents per box, or one of the many kinds of colored crayons to be had at five cents per package.

The color scheme for the walls of a room may be a simple rectangle with lines bounding the picture moulding and wainscoating. For painting or staining on dressed wood, the children may be asked to bring scraps of dressed lumber from their homes, and these may be sawed into such shapes as desired. The painting meant is simply house or implement painting. For the staining, ask the children to bring common laths, shingles or other undressed lumber and teach them to treat with creosote stains.

Have the children make a collection of all the hard woods in the neighborhood, and polish and stain on cross sections so as to bring out the grain.

III Book Making.

1. Select sheets of paper, the proper size and number, measure the length and breadth of these, draw on gray or brown card-board a rectangle one-fourth inch wider, and one-half inch longer than one of these sheets. Cut two pieces of card-board of this shape and size, lay the sheets of paper between these backs so that the backs will project one-fourth inch beyond the paper at top and bottom and at one side, coinciding with the sheets on the other side. Then on this side, make three perforations with a card punch through card board and sheets. Through these perforations, tie heavy cord with ornamental knots. Put suitable cover design.

2. Select leaves and cut backs as before. Instead of perforations, stitch leaves and backs together, and paste cloth over the stitching. Have children to make books for geography, history, literature, etc., after one of these methods.

3. Book making. The mending of old books, the backs of which have worn out, should receive careful attention.

IV Mat Making.

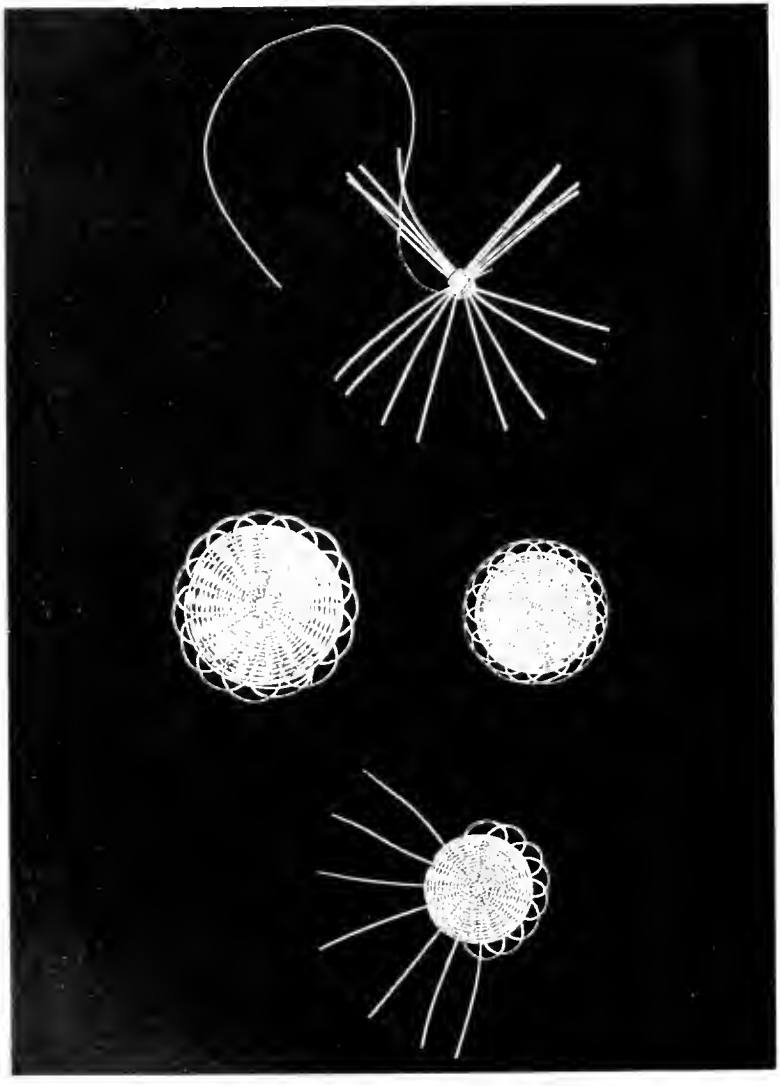
1. Have the children plait ordinary corn shucks in long heavy plats, and then coiling up these plaits sew them together with heavy cord or fasten them together with narrow white oak splits. This makes substantial door mats for school or home.

2. Take long strips of poplar bark and soak them in water until the stiff outside layer can be pealed off, plat the inside bark and bind together as in case of the shuck mat.

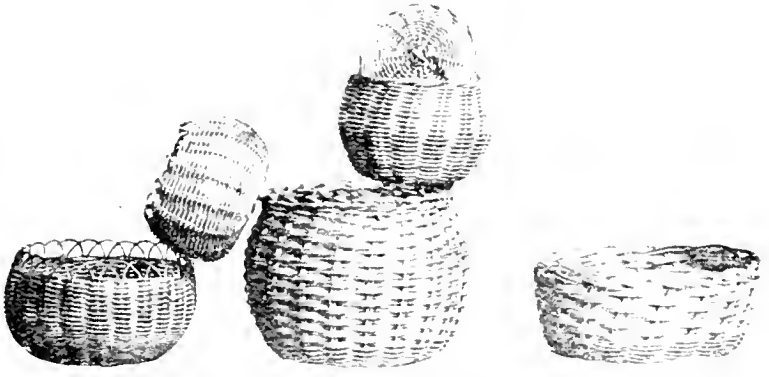
BASKETRY.

Make baskets for use in school and home of white oak splits, willow twigs, poplar bark, birch bark, pine needles, wire-grass, straw, or any other material that the children can gather in the neighborhood.

Willow Mats in Process of Making.



Willow Baskets.



VII Wood Work.

In the work suggested below an elaborate equipment of tools is not necessary. Every piece of it has been done already in Georgia country schools without any formal equipment. The simpler pieces have been done with a pocket knife and a piece of glass. When other tools are used the children borrow them from their homes.

Some of the teachers have enlisted the interest of fathers and induced them to come to the school and help in the work.

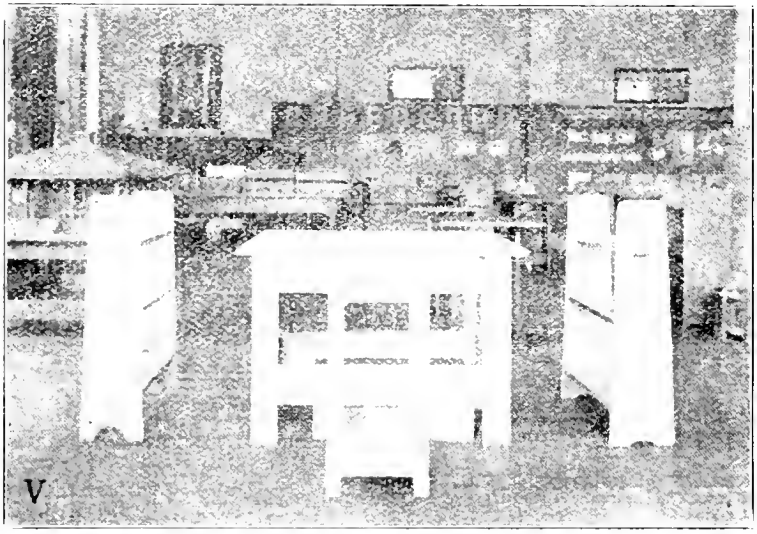
Suggestive List of Articles to be Made.

Dibbles, hammer and axe handles, butter paddles, churn dashers and lids, bread boards, sand tables, flower boxes, water stands, rustic fences, trellises for vines, bird boxes, doorsteps, book shelves, porch chairs, swings, wheelbarrows, tables, bookcases, hat and cloak racks, step ladders, merry go-rounds, poultry coops, houses, and brooders, bread trays, salt boxes, drinking troughs for farm animals, rolling pins, seeding testing boxes, etc. They may build a wood house, shelters for the sand pile, and school lunch table; put glass in windows, and repair the roof, steps, floors, etc.

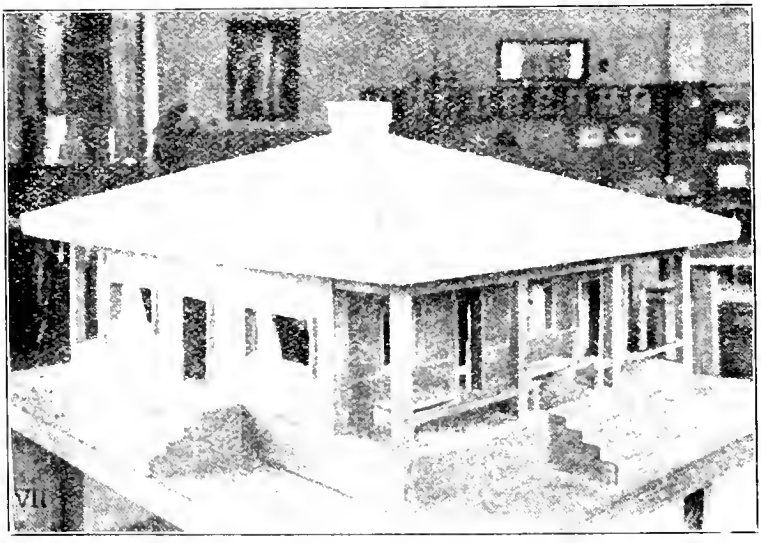
Excellent woodwork, consisting of library table, magazine rack, picture frame, flower box, small table, sled, log cabin, bookshelves, washboard, and sets of doll furniture, was done by the pupils of a Hancock County school of seven grades and one teacher, Miss Lola Allen. The tools with which it was done, were all borrowed from the parents. In addition to this, the children built a cloak room, made steps for the house, enclosed and cultivated a flower garden, and built and furnished a playhouse. That they did not neglect the usual work is abundantly proved by their fine written work in Grammar, Geography,

Arithmetic, Spelling, Composition etc. Miss Allen had had no previous training in woodwork.

Thanks are due The School Arts Publishing Co., Boston, Mass., for many of the illustrations used in this work. Extracts were also made from Holton P. Rollins' "Industrial Work for Public Schools."



Woodwork Done by School Children.



House Built by School Children.

Suggestive Daily Program for a School of One Teacher and Seven Grades.

Time.	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.
8:00- 8:10.	Opening Ex.	Opening Ex.	Opening Ex.	Opening Ex.	Opening Ex.	Opening Ex.	Opening Ex.
8:10- 8:20.	Reading.	Drawing.	Problems.	Problems.	Arithmetic.	Arithmetic.	Arithmetic.
8:20- 8:30.	Drawing.	Reading.	Problems.	Problems.	Arithmetic.	Arithmetic.	Arithmetic.
8:30- 8:45.	Paper Cutting.	Copying.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.	Arithmetic.
8:45- 9:15.	Copying.	No. Building.	Drawing.	Drawing.	Arithmetic.	Arithmetic.	Arithmetic.
9:15- 9:30.	Nature Study.	Nature Study.	Nature Study.	History or Geography.	History or Geography.	History or Geography.	History or Geography.
9:30- 9:50.	Color Work.	Color Work.	Color Work.			History or Geography.	History or Geography.
9:50-10:15.	Work in Sand.	Work in Sand.	Reading.	Reading.	Reading.	Recess.	Recess.
10:15-10:30.	Recess.	Recess.	Recess.	Recess.	Recess.	Grammar.	Grammar.
10:30-10:40.	Language.	Language.	Language.	Language.	Language.	Grammar.	Grammar.
10:40-10:50.	Writing.	Language.	Language.	Language.	Language.	Grammar.	Grammar.
10:50-11:10.	Paper Folding or Tearing.	Paper Folding or Tearing.	Card Board Work.	Language.	Language.	Grammar.	Grammar.
11:10-11:40.	Gardening or Housekeeping.	Gardening or Housekeeping.	Spelling.	Spelling.	Spelling.	Grammar.	Grammar.
11:40-12:00.	Writing.	Writing.	Writing.	Writing.	Writing.	Writing.	Writing.
12:00- 1:00.	Recess.	Recess.	Recess.	Recess.	Recess.	Recess.	Recess.
1:00- 1:10.	No. Work.	Man. Training.	Man. Training.	Hygiene or Agriculture.	Hygiene or Agriculture.	Recess.	Recess.
1:10- 1:20.	Man. Training.	No. Work.	Reading.	Hygiene or Agriculture.	Hygiene or Agriculture.	Reading.	Reading.
1:20- 1:30.	Agriculture.	Agriculture.	Reading.	Hygiene or Agriculture.	Hygiene or Agriculture.	Hygiene or Agriculture.	Hygiene or Agriculture.
1:30- 1:50.	Agriculture.	Agriculture.	Agriculture.	Hygiene or Agriculture.	Hygiene or Agriculture.	Physiology or Agriculture.	Physiology or Agriculture.
1:50- 2:10.	Man. Training.	Man. Training.	Agriculture.	Reading.	Reading.	Physiology or Agriculture.	Physiology or Agriculture.
2:10- 2:20.	Physics and Reading.	Physics and Reading.	Man. Training.	Reading.	Reading.	Agriculture.	Agriculture.
2:20- 2:40.	Work in Sand.	Work in Sand.	Man. Training.	Man. Training.	Man. Training.	Reading.	Reading.
2:40- 2:55.	Recess.	Recess.	Recess.	Recess.	Recess.	Recess.	Recess.
2:55- 3:5.	Man. Training.	Man. Training.	Spelling.	Spelling.	Spelling.	Spelling.	Spelling.
3:5 - 3:15.	Man. Training.	Man. Training.	Drawing.	Drawing.	Spelling.	Spelling.	Spelling.
3:15- 3:25.	Play.	Play.	Man. Training.	Reading.	Reading.	Man. Training.	Man. Training.
3:35- 4:00.	Man. Training.	Man. Training.	Man. Training.	Man. Training.	Man. Training.	Man. Training.	Man. Training.

Special Friday Afternoon Program.

Time.	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.
1:00- 1:20.	Health.	Health.	Health.	Sewing or Woodwork.	Sewing or Woodwork.	Sewing or Woodwork.	Sewing or Woodwork.
1:20- 2:20.	Man. Training.	Man. Training.	Man. Training.	Cooking.	Cooking.	Cooking.	Cooking.
2:20- 3:00.	Housekeeping.	Housekeeping.		Sewing or Woodwork.	Sewing or Woodwork.	Sewing or Woodwork.	Sewing or Woodwork.

3:00- 4:00. 1. Corn and Canning Club Work.
2. Entertainment for Parents.
3. Excursion for Whole School.

NOTE—The recitations are printed in heavy face type. The other subjects are meant for seat work.

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